

Environment and Social Management Plan (ESMP)

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Uzbekistan: Electricity Sector Transformation and Resilient Transmission Project (P171683) - Substation "Tashkent" 500 kV

Electricity Sector Transformation and Resilient Transmission

Prepared by the Joint-Stock Company «National Electric Grid of the Republic of Uzbekistan» for the World Bank (WB).

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Abbreviations

JSC	Joint-stock company
ACM	Asbestos-Containing Materials
ACMMP	Asbestos-Containing Materials Management Plan
AT	Autotransformers
BOD	Biological oxygen demand
BOQ	Bill of quantities
CM	Cabinet of Ministers
DEIS	Draft Environmental Impact Statement
EA	Environmental assessment
EIA	Environmental Impact Assessment
EMF	Electromagnetic field
EMoP	Environmental Monitoring Plan
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
GHG	Green-house gases
GIIP	Global International Industry Practice
GosSIK	State Specialized Inspection of Analytical Control
GOST	State Technical Design Standard
GoU	Government of Uzbekistan
GM	Grievance Mechanism
HR	High risk
IFC	International Finance Corporation
IP	Indigenous Peoples
LR	Low risk
MEN/or MES	Main electric network
MPC	Maximum permissible concentrations
MPD	Maximum permissible discharges
MPL	Maximum permissible levels
MR	Moderate risk
MSW	Municipal solid waste
NEGU	Joint-Stock Company “National Electric Grid of Uzbekistan”
NGO	Non-governmental organization
O&M	Operations and maintenance
OL	Overhead lines
PIU	Project Implementation Unit
PP	Decree of the President of Uzbekistan
PPE	Personal Protective Equipment
PVC	Polyvinyl chloride
RCM	Resolution of the Cabinet of Ministries
RE	Renewable energy
RPIU	Regional Project Implementation Unit
Ruz	Republic of Uzbekistan
SanPiN RUz	Sanitary rules and regulations of the Republic of Uzbekistan
SASMR	Semi-annual social monitoring reports
SBS	Substation
SCB	Substation control building
SCEEP	State Committee on Ecology and Environmental Protection (or Goskomekologiya)
SEA/SH	Sexual exploitation and abuse, or sexual harassment
SEAP	Site Environmental Action Plan

SES	Sanitary Epidemiological Service
SNR	Sanitarian Norms and Rules
SR	Substantial risk
TPP	Thermal power plant
USD (US\$)	United States dollar
UZS	Uzbek Sum
WB	World Bank
ZRU	Law of the Republic of Uzbekistan

1. EXECUTIVE SUMMARY

1.1. General provisions of the Project

The implementation of the "**Electricity Sector Transformation and Resilient Transmission**" Project aims to improve the reliability of the transmission system and the operation of the newly established transmission company to facilitate the development of the electricity market in Uzbekistan. The project is implemented by NEGU (National Electric Grid) under the Ministry of Energy of Uzbekistan and funded by the World Bank (WB). The proposed project will have four components. The Environmental and Social Management Plan is being developed under the Component 2 - **Power grid strengthening and renewable energy integration**.

This component will finance a portion of the NEGU priority investment program for 2021–2026, including upgrade and modernization of existing high-voltage substations and construction of a new transmission substation and related to it lines. This component will accordingly support: (a) modernization of 22 priority substations that were identified for rehabilitation across the country; (b) construction of new substation: 500/220 kV "Koltsevaya" to release overloading on neighboring substations and to meet growing demand in the respective regions; (c) construction a new related 500 kV (72 km) and 220 kV (213 km) transmission lines to connect the aforementioned substation to the national transmission network.

Project location. The project will be implemented in 10 regions of the Republic of Uzbekistan, (Andijan, Fergana, Tashkent, Syrdarya, Samarkand, Bukhara, Navoi, Kashkadarya, Surkhandarya, Khorezm) and in Tashkent city. Modernization of the Substation "Tashkent" 500 kV will be carried out in Tashkent region, Parkent district, 54 km from Tashkent city.

The substation is situated in Tashkent province, playing an important role in the 500 kV transmission network and supplying electricity to the capital city. The 500kV switchyard of substation connects transmission lines coming from substations Tashkent TPP, Novo-Angren TPP and Syrdarya TPP which then must be from newly built 500 kV Koltsevaya substation instead. The 220kV switchyard is connected with Kuyluk substation, Traktorsoz substation, Chirchik substation and Tashkent TPP. The Project will add one single-phase autotransformer with the capacity of 167 MVA. Other equipment including HF communication equipment and relay protection devices will be also replaced.

Potential socio-economic impact. Direct and indirect benefits are expected from this project. The socio-economic impact of the project will be mainly positive and related to the improvement of the district and Tashkent region's electricity transmission network as a whole. Stable electricity supply will improve living conditions, incomes and economic conditions for business activities.

Problems with electricity supply in households negatively affect the quality of life of all family members, especially women and children. Unstable electricity supply affects women's use of their time in traditional social roles, and creates barriers for working women. Since women housewives usually have most of the household and family responsibilities, they are the main consumers of electricity in the households. Women cannot use household appliances, such as washing machines or electric cookers. Direct benefits also include the purchase of modern equipment to upgrade and automate the substation. Indirect benefits include increased knowledge of substation staff and enhanced capacity of the NEGU as a whole.

Potential environmental impact. The project activities will support a wide range of investments focused on the need to modernize and automate the substation, build a new

substation and transmission lines and will not only have a positive social and economic impact, but also an environmental impact.

Substation modernization and operation of transmission lines cause small environmental impacts during their implementation, resulting in both positive and negative consequences.

During modernization and construction work on major renovations of buildings, pipelines and cable ducts, a number of different adverse environmental and social impacts can occur, such as (a) increased environmental pollution from waste; (b) noise; (c) air pollution from dust, combustion residues; (d) increased pollution of groundwater and surface water resulting from inadequate prevention and mitigation measures; (e) degradation and soil contamination; (f) threats to human health resulting from improper handling of heavy equipment during construction activities; (g) temporary restrictions on access to private and public assets (land, commercial facilities, roads, markets, etc.). These impacts are typical of construction or rehabilitation activities and can be mitigated by the application of best construction practices and/or appropriate mitigation measures.

Issues of involuntary resettlement. The project will use the current area of the substation without exceeding the boundaries and limits of the existing facility. No additional land acquisition is required and all modernization activities will be carried out within the existing area.

Project category. Given the location of the substation at a distance of 500 meters from residential buildings and the absence of infrastructure (roads, markets, etc.) near the substation, minor impacts with irreversible consequences are foreseen during the construction period (Fig.1).

According to the World Bank standard on the impact of social and environmental risks ESS 1, the Substation "Tashkent" 500 kV modernization project is categorized as **Moderate (MR)**, therefore the development of the ESMP should focus on specific environmental/social issues.

1.2. Impacts, their management and mitigation

Land acquisition – The subproject activities do not involve land acquisition during substation modernization, all subproject activities will be carried out on the substation plot.

Construction site – The construction site is conducted on the existing substation, where there is no woody vegetation. There is no need for a campus for workers. Sanitation facilities, warehouses will be temporary. The construction workers will be accommodated in a nearby settlement.

Air Pollution - Dust will form around the construction area and transportation route. Earthworks, a temporary work area as well as the operation of construction equipment will be sources of dust and combustion products of diesel fuel (nitrogen oxides, sulphur oxides, nitrogen oxides, carbon, soot, aldehydes, benzo(a)pyrene).

Noise and vibration - Construction machinery, transport trucks will be a source of noise and vibration. Works will be carried out only during daytime.

Electric current impact - the objects of electric current exposure at the substation can be service personnel, as well as people and animals-when the potential is removed from the earthing devices when short-circuit and lightning currents flow through them.

Water Pollution and Water Use – Earthworks, construction site work, oil storage,

hazardous materials storage, as well as soil waste will become sources of water pollution. Leakage of oil, hazardous materials, construction waste and household waste can lead to chemical pollution.

Hazardous materials and soil contamination - Leakages of fuel, lubricants, construction waste and pit latrines can cause soil contamination.

Waste - Construction work will inevitably generate solid and liquid waste, including inert waste (e.g. concrete, wood, plastic, etc.) and hazardous waste (e.g. used oil). In addition, uncontrolled wastewater and "grey water" discharges (e.g. from toilets and canteens) might come from construction sites can also cause odours and contaminate local water resources.

Operating a construction site for workers generates solid waste. Excavation work generates rock dumps and excavated soil. Other construction activities generate construction waste such as wood, metal, plastic, grass, paper and hazardous waste. Without appropriate waste management measures, local environmental pollution may occur.

Flora and fauna of the project area – The upgrading works will be carried out within the area of the existing substation, so no significant damage to vegetation, in particular to trees, is foreseen. In the substation area, there are no trees or shrubs (Fig. 1, 2 and 3).

There are no plants listed in the Red Book of Uzbekistan on the territory of the project area.

Public Health and Safety - The storage of fuels and chemicals creates health and safety risks that can also affect local communities. Trucks, materials transporters and other construction vehicles will use the same public road. The risk of accidents with local vehicles, pedestrians will be higher during the construction period.

Occupational health and safety - Employee rights, including occupational health and safety, must be taken into account to avoid accidents and injuries, loss of labor resources, labor abuses and to ensure fair treatment, remuneration, working and living conditions.

Physical and cultural resources – The possibility of finding finds may arise during excavations. The report uses "chance find" procedures, which include a pre-approved approach to managing and preserving materials that may be found during project implementation.

Road – The substation modernization will inevitably cause temporary inconvenience to residents because the roads will be occupied by heavy vehicles and machinery. Access to the facilities under construction is envisaged on existing roads.

During the construction/modernization phase, the EPC contractor shall have the contractual obligation to minimize short-term environmental impacts using known methods such as dust suppression on the road and construction site, setting vehicle speed limits in the project area, ensuring sufficient shower and toilet facilities for construction workers, proper management of domestic waste (especially when disposing of food waste), and the introduction of health and safety standards and regulations. The appointed project manager must be vigilant in ensuring compliance with contractual environmental and safety provisions.

1.3. Impacts during the operation stage

No significant environmental impacts from emissions, discharges and waste are expected during the operational phase of the modernized substation, as the facility itself is operational and the modernization measures will only improve the operation of the substation.

The impacts will mainly be positive. During operation of the modernized substation, the substation infrastructure is expected to improve (overhaul of the substation control buildings, pump house, installation of area lighting), which will positively affect working conditions and safety of employees. Equipping the substation with new equipment will improve operation of power transmission system in the district and Tashkent region as a whole. Stable power supply will improve living conditions, income and economic conditions for entrepreneurship.

Minor impacts during the operational phase may be related to the generation of waste, electrical and magnetic radiation. Waste can be a source of contamination of soil, surface and ground water. It is therefore essential that these wastes are disposed of in a timely manner. To prevent negative effects on substation personnel from electrical and magnetic radiation, periodic measurements of the electrical and magnetic fields are recommended.

1.4. Public consultations

During the preparation of the ESMP, initial consultations were held with stakeholders and affected communities in April 7, 2021. Issues and concerns raised during the consultation were reflected in the ESMP Annex 12.

An environmental summary in Uzbek language will be published prior to the final public consultation. The results of the public consultation, responses and questions, minutes, photographs and lists of participants are presented in Annex № 1 of this report.

1.5. Conclusion

The Environmental and Social Management Plan for the Substation "Tashkent" 500 kV was carried out based on the analysis of the social surroundings and the environmental state of the environment, current technical condition of the substation and taking into account the expected consequences of the implementation of the measures. The implementation of the measures provided by the project will ensure uninterrupted, reliable operation of the power supply system of the Tashkent region population.

Thus, the assessment of the identified impacts of the subproject consisting of substation modernization through equipment replacement, building overhaul will result in improved energy supply, which will have a positive impact on electricity transmission and living standards of the population.

Consequently, it can be recommended that the project is considered environmentally feasible. Implementation of the project will not cause adverse environmental impacts and the relevant measures listed in the previous section will, if implemented, fully comply with international requirements and reduce/mitigate adverse impacts.

2. PROJECT CONCEPT

2.1. Project description

Project Objective. The "Electricity Sector Transformation and Resilient Transmission" Project aims to improve the reliability of the transmission system and the operation of the newly established transmission company to facilitate the development of the electricity market in Uzbekistan.

The proposed project will consist of the following four components:

- (i) **Digitalization of the electricity transmission sector:**
The objectives of this component are take advantage of modern digital technologies to support the enhanced monitoring, automation, and control of the power system in Uzbekistan.
- (ii) **Power grid strengthening and renewable energy integration:** This component will finance a portion of the NEGU priority investment program for 2021–2026, including upgrade and modernization of existing high-voltage substations and construction of a new transmission substation and related to it lines. This component will accordingly support: (a) modernization of 22 priority substations that were identified for rehabilitation across the country; (b) construction of a new substation: 500/220 kV "Koltsevaya" to release overloading on neighboring substations and to meet growing demand in the respective regions; (c) construction of related 500 kV and 220 kV transmission lines to connect the aforementioned substation to the national transmission network.
- (iii) **NEGU Institutional Development and Project Implementation Support:** This component will support developing and improving the institutional capacity and technical capabilities of NEGU to ensure it can effectively carry out its functions of reliable operation of the transmission system and electricity market in Uzbekistan.
- (iv) **Electricity Market Development:** This component will provide technical assistance for the design and implementation of the electricity sector's transition plan toward the establishment of a wholesale electricity market and will include preparation of secondary legislation, market rules, institutional capacity building as well as design and implementation of systems required for market operation and management.

This ESMP considers Component 2 **Power Grid Strengthening and renewable energy integration**, in particular the modernization of one of the 22 substations, Substation "Tashkent" 500, located in Tashkent region, Parkent district. The Project will add one single-phase autotransformer with the capacity of 167 MVA. Other equipment including HF communication equipment and relay protection devices will be also replaced.

2.2. Project location

The Substation "Tashkent" 500 is located on a 16.42 ha plot of land in Parkent district, Tashkent region, 56 km from Tashkent city. Around the substation there are farm lands. This substation is a part of Tashkent Regional Transmission Electric Networks.

Table 1. Environmental conditions of the Project Area

No	Name	Unit
1.	Wind pressure	0.38 kPa
2.	Ice-coated area	II

No	Name	Unit
3.	Minimum temperature	- 29,5°C
4.	Maximum temperature	- +44,5°C
5.	Seismic	8 points



Figure 1: Substation "Tashkent" 500 (41°22'7.10 "N 69°34'5.10 "E), Tashkent region, Parkent district

2.3. Description of the Substation “Tashkent”

The Substation “Tashkent” is located in the Tashkent region, commissioned in 1991. Currently, the substation has two parallel autotransformers (ATs) (3x167MVA/500/220/10 kV) with capacity per single-phase 167 MVA.



Figure 2. Substation “Tashkent” single-phase ATs of 167 MVA per phase.

From the Substation "Tashkent", three backbone 500 kV overhead lines "L-502", "L-522" and "L-523" depart for the Syrdarya, Tashkent and Novo-Angren TPPs (thermal power plants) respectively.



Figure 3: Substation "Tashkent" 500 kV outdoor switchgear

The primary circuit of the 220 kV outdoor switchgear is made according to scheme № 13H "Two working and bypass busbar systems": 9 - overhead lines of OL-220 kV (L-6-T, L-T-Ch-1,2, L-2-T, L-T-Traktorsoz1,2, L-T-Ku-1,2,3).



Figure 4: Substation "Tashkent" 220 kV outdoor switchgear

2.4. Project solutions

2.4.1. Electrical part

In accordance with the terms of reference for the design of the 500/220/10 kV "Tashkent" substation, the following scope of modernization is envisaged:

1. Transformers:

- Purchase of 500/220/10 kV autotransformer, 1×167 MVA (for reserve phase);

2. Replacement of disconnectors:

500 kV outdoor switchgear:

- single-pole with two earthing blades - 10 sets.;
- single-pole with one earthing blade - 6 sets.;
- replacement of accumulator batteries with rectifiers;
- installation of 500 kV voltage transformers (2 pcs.);
- replacement of HF communication equipment, installation of dispatching switchboard with loud-speaking and notification functions for 16 numbers;
- replacement of relay protection and emergency control equipment, relay protection test devices and primary equipment;
- replacement of the substation duty operator's workstation and telemechanics control system.

2.4.2. "Tashkent" Substation Master Plan and Transport

Indicators according to the master plan scheme:

Total site area - 16.09 ha;

Built-up area - 9.5 ha;

Built-up density – 57,9 %.

The master plan of the construction site is made according to the technological scheme of the plant, taking into account the existing communications, buildings and facilities and observing sanitary and fire safety regulations.

The project involves the construction of a 50 m³ oil sump tank.

In order to minimize the amount of excavation work, the values of the design slopes of the site are close to the minimum permissible.

As for the pavement of sites for repair of autotransformers, it is provided construction of two-layer asphalt concrete pavement of coarse-grained asphalt mix with thickness of 0.08 m and fine grained asphalt mix with thickness of 0.05 m, on gravel-sandy base with thickness of 0.2 m and on crushed stone base with thickness of 0.1 m with spreading of bitumen mastic on top of base.

2.4.2.1. Architectural and structural part

Table 2. Reconstruction and modernization of buildings and structures of Substation "Tashkent"

№	Name of building or structure	Project solutions
1	Substation control building (SCB)	The phase 1 SBS is made of quick-erected reinforced concrete panels. The phase 2 SBS is made of quick-erected reinforced concrete panels with columns (see drawings). Roofing - V-shaped roof of asbestos-cement sheets on metal structures; roofing and slab - prefabricated reinforced concrete slabs. Repair works: <ul style="list-style-type: none">- replacement of floors, taking into account modern flooring materials;- restoration of all internal and external finishing materials with replacement with modern finishes;- replacement of perimeter pavement on the building contour;

№	Name of building or structure	Project solutions
		- replacement of corrugated asbestos-cement roofing sheets with profiled decking on metal structures.
2	Pumping station building of 1st and 2nd elevations	Brick building; V-shaped roof of asbestos-cement sheets; prefabricated reinforced concrete slabs. Equipped with a hand hoist with a capacity of 1t. Repair works: - replacement of corrugated asbestos-cement roofing sheets with profiled decking on metal structures; - replacement of all door and window units with elements of modern materials; replacement of flooring with modern flooring materials for the purpose of the premises; - renovation of all interior and exterior finishes with the replacement of modern finishes for the intended use of the premises; replacement of perimeter pavement on the building contour.
3	Oil sump tank 50 m ³	Monolithic reinforced concrete structure buried in the ground
4	Foundations for equipment	Foundations for power transformers, gas-insulated circuit-breakers - reinforced concrete; foundations for disconnectors, auxiliary transformers - prefabricated concrete.

2.5. Scope of work

The purpose of this ESMP is to provide an assessment of potential environmental and social issues that need to be taken into account in relation to the construction and maintenance of the subproject. The ESMP is based on the principles, rules, guidelines and procedures set out in the Environmental and Social Management Framework for the whole project, and this site-specific ESMP identifies the potentially significant environmental and social impacts of the subproject Tashkent 500, and determining the appropriate environmental controls, mitigation measures and degree of control.

The site-specific Environment and Social Management Plan (ESMP) is an important document that should be circulated to the key partners prior to project implementation.

The ESMP provides an integrated approach to environmental and social management that has been adopted to confirm the potential environmental and social impacts of the subproject. The purpose of the ESMP is (i) to identify the potential environmental and social impacts of this subproject and (ii) to detail the measures to be taken during the implementation and operation of the subproject to eliminate or offset adverse environmental and social impacts, or to reduce them to an acceptable level, and (iii) to detail the actions needed to implement these measures; (iv) As well as to allow for meaningful and inclusive multi-stakeholder consultations and engagement throughout the lifecycle of the programme.

Environmental and social management provides general and systematic guidance covering policies, procedures and regulations that should be linked throughout the project implementation period to ensure that social and environmental issues are systematically addressed during the project implementation stage. In addition, the ESMP provides technical input and guidance to the Project in terms of environmental and social management. Thus, the application and implementation of the ESMP will guide the integration of social and

environmental aspects into decision-making at all stages of project planning, design, implementation, operation and maintenance by identifying, preventing and/or minimizing adverse social and environmental impacts - at the earliest stages of project implementation process.

The proposed substation "Tashkent" 500 modernization project is environmentally sound and does not present any major environmental problems that could arise during both the construction and operation phases. One possible way to ensure environmental management during construction and operation is to develop standard operating procedures that take into account safety and environmental issues and ensure compliance by all employees and are monitored by the project engineer.

It is recommended that a contract be concluded with the contractor during the construction phase to minimize short-term environmental impacts using known traditional methods such as water spraying to minimize dust, limiting the speed of traffic within the project area, ensuring sufficient toilets for construction workers, properly disposing of household waste (especially food waste) and introducing health and safety regulations. The designated project manager should closely monitor compliance with the environmental and safety provisions of contracts.

The overall objectives of environmental management are:

- Implementation of measures to prevent or reduce any negative impact to the acceptable levels;
- Implementation of measures that contribute to ensuring environmental measures coinciding with technical and other project activities during implementation;
- Implementation of measures to eliminate risks at construction and operation stages;
- Monitoring and manage of Grievance Mechanism during construction and operation.

3. POLICY, LEGAL AND REGULATORY FRAMEWORKS FOR ENVIRONMENTAL AND SOCIAL ASSESSMENT

3.1. National environmental and social legislation of Uzbekistan and procedures

Environmental and social impact of the Project is regulated by a number of environmental and sociological legislative acts of the Republic of Uzbekistan. In accordance with Article 11 of the Law of the Republic of Uzbekistan "On Environmental Expertise", the project requires EIA preparation.

Central among these principles is the priority of protecting human life and health. The Constitution and environmental legislation establish the right of citizens to a favorable environment for life and health and establish guarantees for its implementation. Legislation provides for a number of other environmental rights and obligations of citizens, which may be implemented through individual or public environmental protection activities.

Table 3. List of environmental laws relevant to the project

Year	Law / Regulation	Last revision
08.12.1992	Constitution of Uzbekistan	16.04.2014
09.12.1992	Law "On nature protection"	18.04.2018
06.05.1993	Law "On water and water use"	23.07.2018
23.09.1994	Law "On Subsoil"	13,12.2002
25.05.2000	Law "On Environmental Expertise";	14.09.2018
03.12.2004	Law "On protected natural areas"	14.09.2017
26.12.1997	Law "On protection and use of flora"	21.09.2016
26.12.1997	Law "On protection and use of fauna"	19.09.2016
27.12.1996	Law "On air safety"	14.09.2017
05.04.2002	Law "On wastes"	10.10.2018
12.11.2013	Law "On Environmental Control"	12.11.2013
28.08.1998	The Law "On the State Land Cadastre"	03.12.2004
23.09.1994	Law "On Subsoil" № 2018-XII	13.12.2002

3.2. Requirements for social assessment

The **Social Assessment** is the process of data collection and analysis, undertaken by the Receiver to identify the social impacts and dimensions of investment projects, provide spaces to incorporate stakeholders' views into project design, and to establish a participatory process for implementation, monitoring and evaluation. The World Bank might require the Receiver to conduct a full Social Impact Assessment in cases where large scale or serious sociological or socio-economic impacts are expected or there is a lack of baseline socio-economic data.

The national legislation of Uzbekistan does not contain any requirements regarding SA, so in case the SA will be requested, the EA will organize the process of SA based on Bank's recommendations. The only national regulatory document that can be applied to SA is the Resolution of the Cabinet of Ministers of February 15, 2013 № 44 "On approval of the Regulations on the assignment and payment of social allowances and financial assistance to

low-income families" as amended in accordance with the CM Resolution № 1046 of December 28, 2019.

Table 4. List of social property and land ownership laws relevant to the project

Year	Law / Regulation	Last revision
29.08.1996	Civil Code of Uzbekistan	18.04.2018
21.12.1995	Labour Code	16.10.2018
25.12.1997	Tax Code	11.10.2018
30.04.1998	Land Code	24.07.2018
13.01.1992	Employment Act	03.01.2018
30.08.2001	Law on Cultural Heritage	18.04.2018
29.08.1996	Law on Public Health	13.06.2017
01.08.2018	Decree of the President of the Republic of Uzbekistan № 5495 "On measures on cardinal improvement of investment climate in the Republic of Uzbekistan"	01.08.2018
25.05.2011	Resolution of the Cabinet of Ministers № 146 on improvement of the procedure for provision of land plots, protection of the rights of legal entities and individuals to land plots for improvement of the architectural appearance of residential areas of the republic, optimal use of their lands for development.	25.05.2011 as amended by Resolution of the Cabinet of Ministers No. 1024 (December 20, 2019)
15.02.2013	Resolution of the Cabinet of Ministers № 44 "On measures for further improvement of the procedure for the appointment and payment of social benefits"	28.12.2019 with amendments based on Resolution of the Cabinet of Ministers № 1046
21.09.2016	Resolution of the Cabinet of Ministers of RUz № 317 "On amendments and additions to some decisions of the Government of the Republic of Uzbekistan, aimed at further improving the procedure for registration of cadastral documentation for real estate"	29.12.2018
30.03.2017	Resolution of the Cabinet of Ministers №165 on the procedure for the appointment and payment by self-governing bodies of lump-sum material assistance to needy families in the Republic of Karakalpakstan and Khorezm region	30.03.2017
16.07.2018	Decree of the Cabinet of Ministers № 3857 "On measures to improve the efficiency of the preparation and implementation of projects involving international financial institutions and foreign public financial organizations".	16.07.2018
27.07.2018	Presidential Decree № 5490	27.07.2018

Year	Law / Regulation	Last revision
	"On measures for further improvement of the system of protection of rights and legitimate interests of business entities".	
26.12.2018	Resolution of the Cabinet of Ministers of RUz № 1047 "On the procedure for the formation and use of centralized funds to compensate for the damage caused to private individuals and legal entities in connection with the withdrawal of land plots for the needs of the state and society"	26.12.2018
10.05.2018	Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated May 10, 2018 № 349 "On additional measures to eradicate forced labor in Uzbekistan"	10.05.2018
13.08.2019	Law of the RUz № 552 "On Privatization of Non-Agricultural Land".	13.08.2019
03.08.2019	Decree of the President of the Republic of Uzbekistan № 5491 "On additional measures to unconditionally guarantee the property right of citizens and business entities".	03.08.2019
16.11.2019	Resolution of the Cabinet of Ministers № 911 "On the procedure for acquisition of land plots and compensation to owners of real estate located on the withdrawn land plot".	16.11.2019
11.12.2019	Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 981 "On approval of the regulation on the procedure for establishing water protection zones and sanitary protection zones for water bodies in the Republic of Uzbekistan".	11.12.2019

3.3. National requirements for Environmental Impact Assessment (EIA)

The national ESA procedure is regulated by the Law "on Environmental Expertise "(2000), updated on 14.09.2017, and Cabinet of Ministers Resolution № 541 of 07.09.2020: "On Approval of the Regulation on State Environmental Expertise". In accordance with Article 3 of the aforementioned law, an environmental impact assessment shall be carried out to identify:

- Compliance of the planned economic and other activities with environmental requirements at the stages preceding the decision to implement them;
- The level of environmental hazard from planned or existing economic and other activities which may have or have had a negative impact on the environment and public health;
- Adequacy and validity of the measures envisaged for environmental protection and rational use of natural resources.

The following activities require EIA implementation:

- projects of state programs, concepts, layouts and development schemes for productive capacities, economic sectors and social sphere;
- when selecting land plots for all types of construction;
- pre-project and design documentation;
- projects of normative-technical and instructive-methodical documents regulating economic and other activities related to the use of natural resources;
- documentation on creation of new types of equipment, technologies, materials, substances and products;
- active enterprises and other facilities that have a negative impact on the environment and citizens' health;
- all kinds of town planning documentation;
- objects with special legal regime.

For the State Environmental Expertise, the Client shall submit EIA materials on the designed facilities, which shall include the following:

- state of environment before the planned activity, population of the territory, land development, analysis of environmental features;
- situational plan with indication of geographical coordinates of the object under consideration, available recreational areas, settlements, irrigation, reclamation facilities, agricultural land, power lines, transport, water, gas and other information about the area;
- envisioned (planned) main and auxiliary facilities, used machinery, technologies, natural resources, materials, raw materials, fuel, analysis of their impact on environment;
- expected emissions, discharges, wastes, their negative impact on the environment and ways to minimize them;
- stocking, storage and disposal of wastes;
- analysis of alternatives to planned or existing activities and technological solutions from a nature protection perspective, taking into account achievements of science, technology and best practices;
- organizational, technical, technological solutions and measures that exclude negative environmental consequences and reduce the environmental impact of the object of expertise;
- analysis of emergency situations (with assessment of probability and scenario of prevention of their negative consequences);
- forecast of environmental changes and ecological consequences as a result of implementation of the object of expertise.

After preparation of the EIA, the State Committee for Ecology and Environmental Protection (SCEEP) is considered a special authorized state body in the field of state environmental expertise.

3.4. World Bank policy requirements for environmental and social assessment

The level of detail of the environmental analysis depends on the scale and impact of the proposed works on the environment and the social environment. Four risk categories are given below: **high, substantial, moderate or low**. When assigning the risk category, relevant factors such as the type, location, sensitivity and scale of the project; the nature and extent of potential socio-environmental risks and impacts; and the Receiver's facilities and determination to manage socio-environmental risks and impacts in accordance with the SES are taken into account. Depending on the nature of the project and the context in which it is being developed, other risk factors may also compromise the implementation of mitigation measures. These may include legal and institutional aspects; the nature of the proposed measures and technologies; governance structures and legislation; and factors relating to

stability, conflict or security.

- **High risk (HR).** A project is classified as HR if it is likely to have significant adverse effects on the environment (depending on the type, location, sensitivity and scale of the project and the nature and magnitude of its potential environmental impacts). These effects are generally irreversible, sensitive, diverse, cumulative or precedent-setting, and may affect areas outside the project sites or facilities.

There are several locations that should be taken into account when deciding whether a project should be classified as a **HR** project:

- in or near sensitive and valuable ecosystems - wetlands, fertile land and habitats of endangered species.
- in or near areas where there are archaeological and/or historical sites or existing cultural and social institutions;
- in densely populated areas where resettlement may be required or potential impacts, pollution and other disturbance may have a significant impact on the population;
- in areas subject to complex development activities or conflicts in natural resource allocation; along watercourses, in aquifer recharge areas or in catchments used for drinking water supply; and on lands or waters containing valuable resources (such as fish resources, minerals, medicinal plants, agricultural soils with a high degree of bone deposit).

- **Substantial risk (SR).** A project is classified as **SR** if the potential environmental impacts, usually site-specific, are reversible in nature; the damage is less than in **HR** category projects, and if mitigation measures can be more easily developed. **SR** category projects sometimes differ only in scale from **HR** category projects.

- **Moderate risk (MR).** A project falls into the **MR** category if it is likely to have minimal or no negative impact on the environment. For example, technical assistance projects in the areas of institutional development, computerization and training are categorised as **MR**.

- **Low risk (LR).** A **LR** category project involves minimal or no impact.

3.5. Recommended Project Categorization

Given the location of the substation at a distance of 500 m from residential buildings and the lack of infrastructure (roads, markets, etc.) close to the substation, minor impacts with irreversible consequences are foreseen during the construction period. According to the World Bank standard on social and environmental risk impacts ESS 1, the Substation "Tashkent" 500 modernization project is rated as MR (Moderate Risk), therefore the ESMP development should focus on specific environmental/social impacts.

These impacts may affect only the area, sites or facilities subject to physical works. These impacts are limited to individual project locations; there are few or no irreversible effects; in most cases mitigation measures are easier to develop.

3.6. World Bank ESF Requirements

Based on the WB Environmental and Social Framework (ESF), an Environmental Assessment (EA) should be carried out during project design. At this stage, potential environmental and social risks are assessed and the impact area of the project is defined. It allows the exploration of project alternatives; site selection, planning and design of adverse environmental impacts. Preliminary EA allows the development of preventive and mitigation measures to manage adverse environmental impacts.

EA is mandatory for all projects where there is the potential for adverse effects on the

environment to occur. In addition, well-organised public participation is mandatory at all stages of the process.

There are 10 World Bank Environmental and Social Standards (ESS) that aim to identify, minimize and mitigate potentially adverse environmental and social impacts from Bank-financed projects.

The ten environmental and social standards (ESS) are as follows):

3.6.1. ESS1: Assessment and Management of Environmental and Social Risks and Impacts

ESS1 sets out the Client's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).

Overall, the project will have a number of positive social and environmental impacts. It supports technical assistance and energy capacity building activities, reduces the operating costs of substation equipment; the consumption of electricity for own and household needs of substations; increases transformer capacity; increases the reliability of electricity supply to consumers throughout the Republic's energy system, ensuring a safe, reliable and affordable electricity supply for households.

However, activities during the period of upgrading and improvement of existing high voltage substations and lines and construction of new transmission substations and lines may result in adverse impacts and therefore the project will need to introduce substantial environmental and social pre-screening, mitigation and monitoring systems.

3.6.2. ESS2: Labor and Working Conditions

ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Receivers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers including full-time, part-time, temporary, seasonal and migrant workers.

The project includes direct workers (employees of NEGU) as well as contracted workers (employees of contractors). NEGU and project beneficiaries conducted screening for primary suppliers to ensure that they have no history of forced and child labor or other significant labor, environmental and social violations.

3.6.3. ESS3: Resource Efficiency and Pollution Prevention and Management

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of green- house gases (GHG) threatens the welfare of current and future generations.

Assessment of associated with civil works risks and impacts and proposed mitigation measures related to relevant requirements of ESS3, including raw materials, water use, air pollution, hazardous materials, and hazardous waste included the relevant ESMPs.

3.6.4. ESS4: Community Health and Safety

ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities.

To address environmental risks and impacts that might affect community Health and Safety, the ESMP includes assessment of work related health risks; works and traffic safety; excessive noise and dust levels, site safety awareness and access restrictions; and labor influx.

3.6.5. ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land, or loss of shelter), economic displacement (loss of land, assets, or access to assets leading to loss of income sources or other means of livelihood), or both.

No additional land acquisition is required for the modernization of existing substations; all modernization activities will be carried out within the substation areas.

3.6.6. ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support.

The activities envisaged by the project as part of the substation modernization are small in scale and are expected to take place within the existing substation - hence the standard for this sub-component of the project is not relevant.

3.6.7. ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

This ESS recognises that indigenous peoples/historically underseved traditional local communities in Sub-Saharan Africa have distinctive characteristics and aspirations that distinguish them from mainstream groups in national communities, and they are often disadvantaged under traditional development patterns.

The Republic of Uzbekistan does not have such groups of people/communities and thus this ESS is not relevant for the Project.

3.6.8. ESS8: Cultural Heritage;

ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. It sets out measures designed to protect cultural heritage throughout the project life cycle.

Project activities are not expected to impact on any physical cultural resources, indirect impacts of project-funded activities and mitigation measures will be carefully examined, as

well as appropriate 'chance finds' procedures which are included in the ESMP.

3.6.9. ESS9: Financial Intermediaries;

ESS9 recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction. Financial organizations are required to monitor and manage the environmental and social risks and impacts of their portfolio and FI subprojects, and monitor portfolio risk, as appropriate to the nature of intermediated financing.

There are no financial intermediaries in this project.

3.6.10. ESS10: Stakeholder Engagement and Information Disclosure.

This ESS recognizes the importance of open and transparent engagement between the NEGU and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

During the preparation of the ESMP, initial consultations were held with stakeholders and affected communities in April 7, 2021. Issues and concerns raised during the consultations were reflected in the ESMP documents.

4. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND MITIGATION MEASURES

4.1. Environmental Impact Assessment Methodology

The purpose of the ESIA is to determine the baseline environmental conditions with a view to identifying and assessing the impact of the various activities of the proposed project. This report contains an abbreviated ESIA, and an Environmental and Social Management Plan (ESMP) and an Environmental Monitoring Plan (EMoP).

Potential environmental impacts were assessed in accordance with World Bank policy and environmental legislation of the Republic of Uzbekistan, and the ESMF of the project. In addition, organizational aspects were taken into account.

4.2. Impact Screening

Screening is used to determine the degree of environmental studies required for the project. This screening is conducted in accordance with the checklist contained in the World Bank's Environmental Assessment Handbook. Using criteria such as project type, scale and location, environmental sensitivity and the scale of impacts, the purpose of the checklist is to filter out minor impacts and to focus on those impacts that require mitigation measures.

The purpose of mitigation is to prevent or reduce any potential adverse impact on the environment. There are various alternatives to mitigate certain effects. Therefore, the choice of mitigation methods should be a joint process between engineers and environmentalists. The methods used must be economically feasible and the best available. Collaboration and monitoring is necessary to ensure that the method is implemented correctly.

Each environmental factor that may be affected by project implementation has been reviewed and the scale and importance of each potential environmental impact has been assessed. The following definitions of the significance of impacts have been used in the environmental impact assessment:

No impact - potential impact is assessed as zero if the project activity is physically remote in space or time from the environmental component, or if the impact is so low that it cannot be measured (i.e. minor). No mitigation measures are required for a project activity that will have "no impact";

Minor impact (positive or negative) - if an impact occurs but does not meet the criteria for significant impact, it is considered minor. For minor adverse impacts, appropriate mitigation measures shall be taken;

Major impact (positive or negative) - a major impact is significant if the project has the potential to affect the environmental component. The following criteria are used to determine whether an impact is significant; (i) the spatial scale of the impact (project area, local, regional or national/international); (ii) the time scale of the impact (short, medium or long term); (iii) the scale of change in the environmental component caused by the project activity (small, moderate, severe); (iv) the significance for local communities; and (v) compliance with international, national, regional or district conservation laws, standards and regulations; and (vi) compliance with Uzbekistan and World Bank guidelines, standards and regulations. Where potentially serious adverse impacts are identified, measures are developed to mitigate their impact to acceptable levels.

Unknown impact - potential impacts from project activities will be assessed as unknown if

the severity of the impact cannot be determined for one of the following reasons: (i) the nature and location of the project activity is uncertain; (ii) the environmental component of the study area is uncertain (iii) the time scale of the impact is unknown; or (iv) the spatial scale at which the impact may occur is unknown. Mitigation measures are defined for impacts that are classified as "unknown impacts" where possible.

There are several types of impacts that need to be considered. Direct impacts are caused by project activities, occur at the same time and in the same place and can occur both during construction and during project operation. Direct impacts will be limited in this project because the reconstruction and construction of water supply and sewerage systems are in fact environmental protection measures.

Indirect impacts, which may include growth induced by the project activity or by the project as a whole, occurring later in time or at a longer distance, are still fairly predictable.

Short-term impacts, such as noise and exhaust emissions from heavy machinery, occur during construction activities and do not generally have long-term effects.

Environmental screening identifies a number of potential environmental impacts that may arise from activities proposed for the project. Where environmental impacts are considered severe (or significant), mitigation measures will generally be taken for inclusion in project documentation.

Impacts arising from construction activities are dependent upon a number of factors, including the temporary use of land and its restoration after construction. The use of 'best practice' during construction works, coordination and cooperation with local authorities in terms of impact management, and strict compliance with the environmental regulations included in project proposals and specifications and compliance with the comprehensive ESMP.

The following section describes the environmental impacts that will result from the project. It also describes the mitigation measures that have been developed and which aim to mitigate to a technically feasible minimum.

The description divides the different phases of the project, design, construction and operation. Ultimately, all proposed construction-related mitigation measures will be included in tender or contract documents, which will be a mandatory element of construction and construction supervision contracts.

4.2.1. Impacts and Mitigation Measures - Design Stage

This chapter presents various design options that have been considered from an environmental and social perspective. As part of the planning process, the selected sites were reviewed in close collaboration with the project team. This interactive planning process aims to prevent and minimize potential impacts to the extent technically feasible. The main points to be considered are the following:

- Loss of vegetation cover
- Loss of agricultural land
- Impact on existing settlements
- Impacts on flora and fauna
- Impact on landscape

The following options were compared at the design stage:

No negative impacts are expected during the design stage. Some surveying is required during the design stage, but no environmental impacts are expected.

4.2.2. Impacts and Mitigation Measures - Construction Stage

During the Modernization of Substation "Tashkent" 500, the greatest impact on the environment is related to civil works. The nature of the environmental impact during and after civil works will change.

The modernization of the Substation "Tashkent" 500 will lead to small environmental / social impacts during their implementation, both positive and negative.

Harm to the environment must be controlled mainly in relation to:

- contamination of soil, surface and ground water through spills of fuel, oil and lubricants;
- health of workers and local communities involved in the construction and operation of machinery;
- collection of waste generated at construction sites;
- environmental disturbance of biocoenosis and habitats of birds and other animals;
- air pollution through emissions of harmful substances;
- preservation of architectural monuments.

Mitigation measures are outlined below.

Environmental precautions during construction

The main environmental impact will be related to construction work. Environmental due diligence is required to control the risks of accidental environmental damage and to prevent the environmental impact of the impact to the greatest extent possible:

- for complex facilities and special works, it is mandatory to develop the components of the work project.
- introduction of new effective materials and structures, technologies of work performance in construction production.
- provide for the creation of safe and healthy conditions that facilitate work and exclude accidents and accidents, ensuring occupational safety rules with the right choice and technically justified size of workplaces and their organization.
- commissioning of modernized facilities that do not meet environmental requirements is prohibited.
- determine the sequence of construction work, keeping local nuisances to a minimum.
- identify construction methods using fencing of work areas. Ensure adequate access to work and living areas as much as possible.
- require the contractor to guarantee the safe movement and installation of the machinery.
- require the contractor to use traffic diversion in the work area if necessary. Traffic control, emergency signals and lighting should be installed according to local regulations. Provide safe bypasses and crossings for pedestrians where necessary.

All this is the responsibility of the contractor and the construction supervision services.

4.2.3. Impacts on land resources

The project area of Substation "Tashkent" 500 is it belongs to "Tashkent regional Transmission company". No additional land acquisition is required and all modernization measures will be carried out within the existing area.

Soil erosion and slope instability should be addressed through backfilling of trenches, terracing of hillsides, planting of trees and construction of dams to trap sediment.

The contractor shall take all practicable measures to prevent degradation and erosion of soil, streets, roads, gardens and fields. The use of heavy machinery should be restricted as far as possible to avoid disturbance and compaction of farmland around the substation.

The main impact on land resources is the contamination of the soil with construction waste and lubricants, cesspool waste, as well as flooding of adjacent lands with possible structural damage. Appropriate sites should be prepared for the collection and storage of construction waste and sediments to reduce the negative impacts on the environment.

During construction of the 50m³ oil sump tank and equipment foundations, organic topsoil suitable for further use shall be removed and temporarily stored separately from the remaining soil materials.

During construction, excavation and backfilling, land levelling, preparation of oil sump tank foundations and equipment foundations will be carried out.

Earthworks will be carried out using excavators and bulldozers. During excavation the soil will be stockpiled near the trenches and excavation pits. The excavation shall be used as much as possible as backfill and embankment. Surplus soil represents waste material and will be used in land levelling. More detailed mitigation measures will be provided below in the Environmental and Social Management Plan (ESMP).

4.2.4. Waste generation

The following waste will be generated during civil work:

- Soil waste from the preparation of sites for the construction of the oil sump tank and foundations for equipment, which will be partly used for backfilling of trenches and pits as well as for site levelling;
- Waste metal materials after modernization will be delivered to "HUDUDIY IKKILAMCHI QORA METALLAR" LLC (Vtorchermet) or for recycling to the metallurgical plant.

Maintenance of equipment will be carried out exclusively at gas stations, used oils and other liquid pollutants will be stored in specially equipped places for them and taken out for regeneration at the nearest oil depot.

Storage of such waste in areas close to populated areas and untimely or inappropriate disposal can affect air quality, dust generation and affect neighboring communities. In addition to this waste, used welding rods, packaging materials and wood will also be generated. Construction waste as well as other waste (paper, glass, plastic, etc.) should be classified into separate containers. Waste disposal sites should be carefully selected at the construction site, and waste classification and recycling rules should be prepared in environmental management plans.

The following types of waste will be generated during substation operation and repair works: scrap ferrous metal, scrap aluminium; scrap copper, scrap lead, scrap brass, scrap rubber, waste silica gel, waste transformer oil, waste compressor oil, welding electrode stubs,

cleaning material contaminated with oil products (oil content less than 15%), uncontaminated paper waste, waste paper and paper filters, waste LED lamps (not containing mercury). Municipal waste is expected to be generated from staff activities.

Hazardous waste

The most hazardous waste generated during construction includes spent fuel and lubricants. These wastes are hazardous pollutants of almost all components of the natural environment - surface water, groundwater, land cover, atmospheric air. They can cause significant environmental damage during improper collection and storage. Therefore, it is necessary to observe the conditions of their collection and storage.

There is an oil storage facility on the substation premises provided for the regeneration of transformer oil. The main part of the used oil is supposed to be regenerated on the territory of the central oil farms of the MEN (MES). Oil regeneration generates used silica gel, which is temporarily stored in polyethylene bags and then taken to a designated landfill site.

When installing containers with burnup fuel and lubricants, the places for the accumulation of this waste should have a solid cover and a canopy, which excludes the penetration of water and foreign objects. Tanks with used oil and contaminated oil products must be equipped with metal pallets. The tray shall be capable of holding the oil in case of an overflow of at least 5% of the volume. The places and sheds where used oil containers are stored must be protected. When storing used oil containers, care must be taken to avoid contaminating the environment with used oil (drum plugs must be tightened).

Wastes of fuel and lubricants should be disposed of at the nearest oil depot as they accumulate. Asbestos-containing materials (ACM) will not be used during project implementation. The transformer oil will not contain polyvinyl chloride (PVC). Hazardous wastes should be stored in certain safe places as defined in the waste management plan.

4.2.5. Impacts on water resources, soil, grounds

Excavation work, oil leakage, improper storage of hazardous materials, construction waste and household waste can lead to chemical contamination of soil, ground, surface and ground water. In the event of an accidental spill, immediate cleaning will take place. Contamination can be caused by wastewater if it is discharged into pit latrines without adequate protective waterproofing layers. All cleaning materials must be stored in a safe place in a separate area of the construction site where the disposal of hazardous waste is permitted. Measures to protect against contamination of surface water, soil and ground should be included in environmental management plans.

During the dismantling and overhaul of the SCB and pump house buildings, construction waste will be generated, which requires a strict system of collection, disposal and minimization.

In case of non-compliance with the rules of work with lubricants during construction works the condition of soils, soil, surface and ground waters will be disturbed. This impact will be temporary and will have reversible effects on these environmental components.

A plan for the prevention of surface and groundwater and soil pollution is presented below in the Environmental and Social Management Plan (Table 6).

4.2.6. Impact on atmospheric air

Temporary environmental impacts from construction activities during dismantling and major

repairs are associated with the use of repair and restoration equipment and excavation works. During the execution of the earthworks project activities, atmospheric air will be impacted through the introduction of inorganic dust from the ground surface and combustion products of diesel fuel (carbon monoxide, nitrogen oxides, hydrocarbons, soot, aldehydes, benz(a)pyrene) from construction equipment and vehicles. Excavation of rock will be carried out using a bulldozer and excavator. The work of the bulldozer and loading will be accompanied by the emission of inorganic dust with SiO₂ content of 20-70% into the atmospheric air. The dust will increase around the construction site and the transportation route around 100-150 meters from the road. The construction site, bypass road, soil dump as well as the operation of construction equipment will become sources of dust. Dust will be generated from open areas for storage of topsoil, sand, soil transport vehicles and sand if they are not covered.

During the construction phase of the project, there will be impacts on local air quality due to construction equipment exhaust and dust generation, but these impacts will be localized and temporary. In particular, the risk of dust pollution will increase during windy weather. The impact will increase when construction/renovation works are undertaken in the vicinity of populated areas.

Given the nature of most activities, these impacts are expected to be short-term, low risk and reversible and can be mitigated by implementing the measures recommended in Table 6. However, the application of additional measures (most often watering, dust screen installation) may be required for facilities associated with excavation works, when transporting dusty materials. Particular care should be taken when coming into contact with toxic asbestos dust, which can be generated when dismantling the roof of the SCB building and pump house, made of asbestos sheets. Personnel should wear protective masks. Guidelines for working with asbestos materials and precautions are given in Annex 4. Negative effects can be prevented by applying best construction practices and appropriate mitigating measures.

Pollution with asbestos dust - Asbestos dust from dismantling old roofs and repairing buildings can pose a serious health hazard to people living in houses near or adjacent to construction sites. In such cases, the contractor will be required to develop a special Asbestos Management Plan before the start of construction work, using the template in Annex 3.

The Asbestos-Containing Materials Management Plan (ACMMP) describes and evaluates the risk of contractors (and others) encountering asbestos-containing material (ACM) at the Project construction sites during the implementation stage of the project; and it provides a procedure for dealing quickly and safely with any ACM that may be found. The WB OP 4.01 Environmental Assessment requires that WB-funded projects apply pollution prevention and control technologies and health and safety measures that are consistent with international good practice, as reflected in international standards such as the IFC/World Bank *Environmental, Health and Safety General Guidelines* (2007). If national legislation differs from these standards, the Receiver is required to achieve whichever is more stringent. There is national procedure Sanitarian Norms and Rules (SNR) of RUz № 0300-11 dated from 2011 "Organization of collection, inventory, classification, disposal, storage and recycling of industrial waste in the conditions of Uzbekistan" covering disposal of ACM¹ in Uzbekistan. However, the procedure does not provide clear description of handling ACM, therefore, the

¹ Uzbek Sanitary Norms SanPin 0233-07 "National standards "Sanitarian Norms and Rules on Work Hygiene and Environment Protection during production and usage of ACM" was one of a number of pieces of legislation deregulated in the 1980's. Notwithstanding their lack of legal status, as the most recently-available local standard, the regulations were referred to in preparing the ACMMP and the protocol for handling and disposal of ACM (see Section) incorporates soil covering requirements from the SanPin.

ACMMP follows the World Bank Guidelines.

The main principles of the ACMMP is (i) prompt and effective action to contain and deal appropriately with the ACM (including safe management and disposal); and (ii) maintaining the safety of site personnel and the general public at all times. The ACMMP is designed for use by Contractor, Project Implementation Unit (PIU) to manage the ACM risk over the project as a whole, and by contractors to deal efficiently with any ACM they or their workers encounter. The procedural element of the ACMMP is therefore designed to provide straightforward instructions that can be easily and quickly understood without the need for specialist knowledge and without referring to other sources.

4.2.7. Noise and vibration impact

Civil works during substation modernization using repair and restoration equipment, transport trucks, earthworks will create noise and vibration in the nearby old buildings, restrict access to the buildings, close parts of the roads and disrupt vehicular traffic along them. The noise footprint will be up to 50 m from construction work areas (dismantling and installation sites for equipment and major repair works). It is not expected that noise levels may exceed the established standards during project activities. Noise impacts can be mitigated through the use of recommended measures. Given the specific nature of the project works, vibration is not expected to affect human health and the integrity of the structures, as no works generating noticeable vibration will be carried out.

Noise and vibration impacts will not affect houses, social facilities as they are at least 500m away when working in the substation area. The construction camp will be temporarily inhabited by construction workers and therefore all works with increased noise must be carried out during daytime hours.

Sanitary Regulations and Norms № 0267-09 are used in Uzbekistan to ensure acceptable noise levels for residential areas. These rules and regulations establish permissible noise parameters for residential and public buildings and residential development of inhabited areas created by external and internal sources and the noise level should not exceed 55 dB(A) during the day and 45 dB(A) at night.

The project must also comply with the sanitary regulations and rules 0120-01 to ensure an acceptable level of noise in the workplace. Noise reduction measures should be presented in an environmental management plan.

In order to reduce the adverse effects of noise in the workplace, workers must wear personal protective equipment – anti-noise equipment that meets the requirements of GOST 15762-70, if it does not contradict the requirements of safe work performance.

4.2.8. Impacts on vegetation and wildlife

During the construction phase, land cover will be indirectly affected by dust settling on the leaf surface and emissions from the combustion engines of the machinery.

Taking into account that the effects of air and soil pollution by chemicals in the area adjacent to the worksite are acceptable, weak in terms of degree and intensity, and the level of pollution will not exceed the permissible norms, the negative impact on land cover will be short-term and weak in terms of time.

Due to the absence of valuable species of trees and vegetation listed in the Red Book of Uzbekistan on the territory of the substation, no significant damage to vegetation is expected during the construction works. Around the territory of the substation, flora and fauna of the

project area are scarce, and the area represents irrigated agricultural land with very low productivity. There are no trees in the area itself.

Species of animals affected by the Project are typical for the steppe ecosystem. Construction noise, transportation, night-time lighting, human access to habitat and night-time activities may threaten the mammals and birds living in the Project area. Vehicles may cause the death of animals that cannot fly. Night transport operations may also result in the death of small and medium-sized mammals. Wildlife, especially birds, may be affected by increased reflectivity and lighting in the project area, which may lead to temporary blindness and disorientation. Once construction work is complete, the area will attract nightlife animals as well as birds and reptiles. Thus, the impact on animals will be weak and reversible.

Mitigation measures will be included in an environmental management plan to minimize impacts on wildlife.

4.2.9. Chance finds (historical monuments or cultural finds)

There is no any historical monuments or cultural objects on project site. It is envisaged that the contractor will continuously monitor the progress of work at the work sites. In the event that archaeological finds are discovered, the contractor shall immediately notify the regional or city Inspectorate for Cultural Heritage Protection.

The Contractor is responsible for protecting any valuable landscapes and sites, including archaeological and paleontological remains. If such remains are found during the works, the "Chance finds" procedure developed within the framework of the ESMP will be applied. An announcement should be made to the relevant authorities and permission should be obtained to continue working after the inventory or inspection of the remains.

4.2.10. Health and safety of workers and community

For workers – Safety and health non-compliance may create a risk for construction workers. The Contractors will have to follow Occupation Safety and Health rules, which include among others strictly implementation established norms and procedure OH&S which depends on type on conducting works, usage of PPE, training activities and monitoring. In addition, all workers need to be introduced to working procedure with hazardous materials. Contractors have to provide workers with appropriate living conditions: safe water supply, washing conditions, rooms for rest and etc.

For community – Substation modernization can be implemented without disrupting the normal livelihoods in any nearby settlements. Environmental and social conditions, including the location of settlements and sensitive and protected areas, must be taken into account in the design of project facilities. The contractor shall adequately protect all buildings, structures, works, services or facilities from damage, disturbance or deterioration for the duration of the contract.

Increased truck and vehicle traffic to construction sites and temporary road closures during transportation of oversized equipment within settlements may also cause inconvenience to local communities. Lack of timely and effective disposal of solid domestic waste and inadequate sanitary conditions for construction workers on construction sites and labour camps can lead to environmental contamination and adversely affect the health of local communities. In addition, the movement of heavy equipment can destroy or deteriorate roads within settlements.

The working methods at the facilities under modernization and construction can create hazardous situations for workers and the population of nearby communities. A healthy

working environment must be created in compliance with health and safety regulations. Work sites and trench bridges must be fenced. Trucks transporting materials and other construction machinery will use the same public road. The risk of traffic accidents with local vehicles, pedestrians will become higher during the construction period.

Traffic control, emergency signals and lighting should be carried out in accordance with local regulations. If necessary, safe bypass roads and pedestrian crossings should be installed.

4.2.11. Traffic and Safety on construction sites

The contractor should plan how to avoid safety problems associated with the movement of traffic and the operation of the excavator at work sites and during the transport of materials. Traffic planning is necessary to minimize the negative impact of project transport on all communities affected by construction. This includes measures to minimize the disturbance of existing road infrastructure, adjacent communities and natural resources, as well as measures to prevent damage to household and community property.

The planning of roads, as well as safe workplaces, parking lots and maintenance areas for trucks and excavators, must be carried out prior to the start of work. Planning includes access routes and entry points to the construction site without affecting households and associated structures, cultivated land, fruit trees or any other potential source of income. Access to commercial and residential real estate should be preserved.

The Contractor shall provide, install and maintain such road signs, road markings, lanterns, barriers and traffic lights and such other measures as may be necessary to ensure road safety around the Project construction sites. Some existing public or private roads or footpaths may need to be closed or diverted for either long or temporary construction periods in order to carry out restoration work. Residents of communities affected by road traffic are advised to provide sufficient information on the impact of traffic characteristic of the project. Where roads that children use to reach schools are used to ensure road safety, road safety education should be provided in schools.

During the construction phase of the Project, air pollution in the form of dust may occur as a result of the movement of trucks. This problem can be solved by limiting the speed of 30 km/h on untreated roads in dry conditions. Injuries or accidents resulting from road traffic accidents should be prevented by planning the terrain, warning signs, fences and driver training. Environmental and safety training for drivers should also include emergency response.

4.2.12. Magnetic field impact

During OHTL operation, the expected maximum magnetic field strength will be 7.76 A/m, which is well below the permissible standards. The MPLs for magnetic field strength are based on occupancy. In accordance with hygienic requirements, eight hours' stay of personnel in a magnetic field of intensity up to 80 A/m for general exposure (to the whole body) and up to 800 A/m for local exposure (to extremities) is allowed).

Consequently, the impact of the overhead transmission line on the environment in terms of magnetic field strength is within the norm, no measures are required to protect personnel and the public from the magnetic field generated by EMF sources from the overhead transmission line wires.

4.2.13. Electric current impact

Electrical currents can affect personnel working during modernization and substation

maintenance personnel during potential removal from earthing equipment when short-circuit currents and lightning currents are flowing through it. The damaging effect of electric current on the human body is characterized by the cessation of heart, respiratory and nervous system operation and in extreme cases it can lead to death. According to GOST 12.1.038-82 the norm of electric current passing through human body without any harmful effect on health is 0.3 mA in case of accident-free operation of electrical equipment and 6 mA – in case of emergency operation and duration of impact more than 1.0 sec.

4.2.14. Pollution of surface watercourses, groundwater, soils

Earthworks, oil storage, storage of hazardous materials will be sources of river water pollution if the watercourse is nearby. Oil spill, improper storage of hazardous materials, construction debris and household waste can cause chemical contamination. All fuel and chemical storage areas (if any) should be sealed inside the bund and protected by fencing. The storage area shall be located away from any watercourse or wetlands. The base and walls of the bund shall be impervious and have sufficient capacity to contain 110% of the volume of the tanks. Disposal of lube oil and other potentially hazardous liquids into the ground or water bodies is prohibited.

In the event of an accidental spillage, immediate clean-up will be carried out. All treatment materials must be stored in a safe place at a site where hazardous waste disposal is permitted. The surface water treatment plan must be carefully planned during the feasibility study to meet the discharge water quality standard. A sedimentation basin, neutralization tank, reserve pond should be prepared taking into account flooding. All activities will be included in the ESMP.

4.2.15. Impacts and Mitigation Measures – Operation Stage

The modernization of the Substation “Tashkent” 500 is expected to increase the coverage of the population with uninterrupted power supply, which will have a positive impact on the living standards of the population and business development.

The installation of new modern equipment at the substation will reduce energy losses, electricity consumption, which will lead to energy savings and increase the efficiency of the substation, metering and data transmission.

During the operation stage, the following types of waste will be generated at the substation site: ferrous metal scrap, aluminium scrap; copper scrap, lead scrap, brass scrap, rubber scrap, waste silica gel, waste transformer oil, waste compressor oil, welding electrode stubs, cleaning material contaminated with oil products (oil content less than 15%), uncontaminated paper waste, waste paper and paper filters, waste LED lamps (not containing mercury). Municipal waste is expected to be generated from staff activities.

Noise impact will not exceed the normative values: 45 dBA in residential areas according to KMK 2.01.08-96 and 80 dBA in workplaces during operation of power substations according to SanPiN № 0325-16 “Sanitary norms of permissible noise levels in workplaces”.

There will be no **atmospheric pollution** after completion of modernization and construction works. During the operation of the substation, oil hydrocarbons are released from the non-densities during the operation of the oil-filled equipment (current transformers, voltage transformers, reactors). In order to compensate for the loss of oil hydrocarbons due to evaporation from non-densities, oil topping up is carried out. The release of hydrocarbons into the atmosphere is not organized.

Security forces – It is envisaged that during the operational stages of the substations, State Security Service personnel will be contracted to ensure the security of personnel and assets of the substation. NEGU will assess the risks posed by these security measures to those inside and outside the substation area. In order to manage any such risk, NEGU will be guided by the principles of proportionality and Good International Industry Practices (GIIP) and applicable national law and regulations such as Cabinet of Ministers Resolution № 60 of 1 March 2012. NEGU will not sanction any use of force by security forces except when used for preventive and defensive purposes in proportion to the nature and extent of the threats.

Work in the substation facilities may involve confined space operations in the pump house, transformers, etc.

To prevent, minimize and control accidents and injuries in the substation, appropriate measures are recommended and presented in the environmental and social management plan.

Thus, the implementation of this project, consisting in the modernization of the substation, will lead to a change in the electricity supply in the area, which will have a positive impact on the whole development complex of the industry and the well-being of the population.

A summary of potential environmental and social risks and impacts with mitigation measures during project implementation is presented in Table 3 below.

Table 5. Summary table of impacts

Impact	
Impacts and Mitigation Measures – Construction Phase	
Air quality	Minor/ Moderate impact
Landscape	Moderate impact
Soil, erosion and slope stability	Moderate impact
Water Quality	Minor impact
Flora and fauna	Minor impact
Noise and vibration	Moderate impact
Impacts on access and movement	Minor impact
Health and safety	Moderate impact
Impacts on cultural resources	Minor impact
Non-local labor	Minor impact
Damage to adjacent land and structures during construction	Moderate impact
Use of security forces	Moderate impact
Impacts and mitigation measures- Operation phase	
Air quality	Minor impact
Water Quality	Minor impact
Flora and fauna	Minor impact
Noise	Minor impact

5. ORGANIZATIONAL REQUIREMENTS

The following section presents an overview of the environmental and social management activities to be undertaken as part of the overall project implementation. Roles and responsibilities of various organizations in carrying out these activities, identification and strengthening of organizational capacity required to achieve the mandatory goals and objectives of the project.

At this stage, an environmental and social monitoring program has been prepared and preliminary costs associated with its implementation identified.

5.1. Organizational structure and division of responsibilities

The overall organizational structure of environmental management for the project is shown in Figure 5.

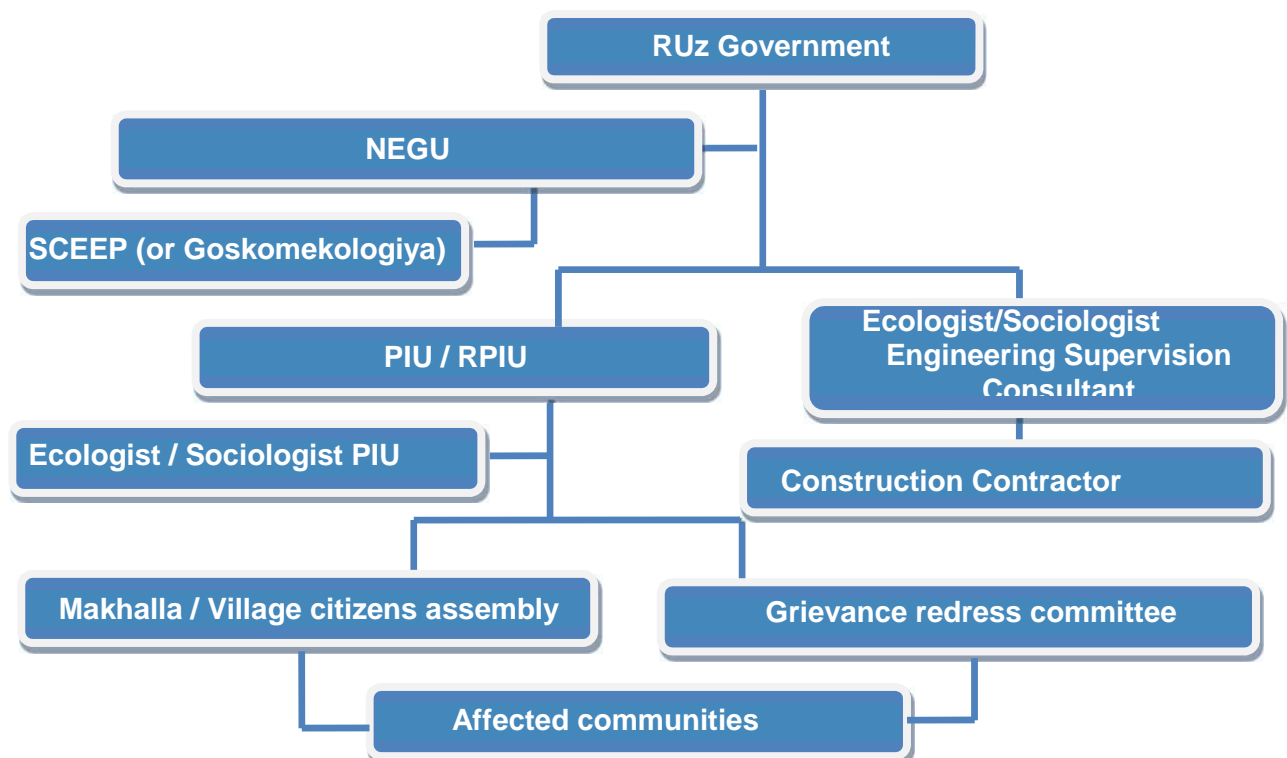


Figure 5: Organisational Structure of the Environmental Protection Authority

5.2. National Electric Grid of Uzbekistan (NEGU)

The NEGU has overall responsibility for the preparation, implementation and financing of environmental and social management and monitoring tasks related to the project. The NEGU carries out its functions through the PIU, which will be responsible for the overall project implementation and will be tasked with the day-to-day management of the project as well as monitoring.

The staff appointed by the PIU will take over all tasks relevant to the environmental assessment. The Project Implementation Unit (PIU) working with and on behalf of NEGU will be responsible for the implementation of the proposed monitoring plan. Implementation of the mitigation measures presented in the ESMP and monitoring plan during construction will be the responsibility of the Contractor. A representative of the PIU and the environmental

and social specialists of the supervision consultants will supervise the monitoring of the implementation of the mitigation and monitoring measures during construction. Local environmental and social specialists will work with international specialists to address complex issues that may arise and will provide ongoing updates in the form of reports to be submitted to the PIU. The PIU staff will also be supported by the Supervision Consultants. The Consultant team will be required to provide an Environmental Impact Monitoring Specialist and a Social Impact Monitoring Specialist.

The feasibility study and detailed design have been consulted with the Goskomekologiya, the DEIS has been prepared and submitted for review, and the project is being considered for approval. Ongoing engagement with Goskomekologiya will be required during project implementation.

Makhalla Committees (local authorities) and Khokimiyats and NGOs will assist in 36 meetings, also to provide information on affected communities, environmental and social impacts. A report on the stakeholder engagement process will form an integral part of the internal monitoring report prepared by the PIU.

The implementation of mitigation measures during the construction phase will be the responsibility of the Contractor in accordance with the project specifications and contractual requirements. The environmental specialists and sociologists of the Supervision Consultant will monitor the implementation of the mitigation measures during the construction stage.

Screening and assessment of environmental and social impacts indicates that the main environmental and social issues arising during construction are not significant and are reversible and can be significantly reduced by implementing the recommended mitigation measures listed in the ESMP (Table 6). Monitoring and compliance with measures during construction is therefore very important.

Construction environmental monitoring has a supervisory function, the main purpose of which is to ensure compliance with the ESMP. Certain actions in the ESMP that are to be verified are included in the Monitoring Plan (see Table 6). These include the preparation of plans for all aspects of the work, such as workplace safety plan, waste management plan etc., which must be completed and approved prior to construction. Air control, noise control and water quality parameters should also be included.

The PIU should monitor project development, implementation of the Environmental and Social Management Plan (ESMP), environmental and social monitoring results and report to the WB in a timely manner. The proposed form is included as Annex 2.

5.3. Reporting requirements

During project implementation, the Supervision Consultants, in cooperation with the PIU, will need to:

- (i) develop an environmental audit protocol for use during construction, and develop a detailed monitoring and management plan; and
- (ii) conduct regular environmental and social monitoring and submit quarterly reports based on the data obtained during monitoring and laboratory analyses.

The PIU will provide the following documents on environmental and social reporting to the WB:

- (i) **Baseline monitoring report.** The report should be submitted to the WB prior to construction work and includes a detailed environmental management and monitoring plan (including data collection locations, parameters and frequency of

collection), baseline environmental data, relevant standards and allocation of data collection responsibilities.

(ii) **Environmental and social monitoring reports (monthly, quarterly and annual).**

Reports will include environmental mitigation measures, actions taken to control, data collected, results of analyses, recommended mitigation measures, environmental training data, and identified environmental and social violations. The report will include the implementation of the ESMP, which will present:

- the organizational structure prior to resolution of environmental issues and issues of the Contractor and the Supervision Consultant,
- data on obtaining all necessary permits related to environmental issues during construction works;
- description of environmental and social impacts during the reporting period and mitigation measures implemented during this period;
- any previously unidentified impacts that occurred during the reporting period and measures implemented;
- any construction related accident, e.g.,
- summarize the monitoring results of environmental quality, capacity building and accidents
- any complaints about the environmental and social aspects of affected people or other parties,
- review the implementation of Grievance Mechanism (GM); and
- updates corrective actions or amendments of the subproject ESMP and SSESMP.

6. ENVIRONMENTAL AND SOCIAL IMPACT MITIGATION PLAN

The Environmental and Social Management Plan (ESMP) has been developed and submitted (see Table 6) and should be updated during detailed design. NEGU should ensure and monitor that contractors prepare an ESMP for the site where construction works will be carried out, based on this ESMP and the actual situation in the project area.

Project-related environmental impacts have been described in detail previously in the relevant sections of this ESMP. The mitigation measures required to address the impacts identified in the ESMP have been summarized in each of the relevant sections covering the physical, biological and socio-economic environment affected by the project. The identified impacts and specific mitigation measures have been consolidated into an Environmental and Social Management Plan (ESMP) shown in Table 6, which includes timelines, responsibilities and, where appropriate, cost estimates for each measure.

During construction, mitigation measures will be aimed at ensuring that contractors carry out all works in accordance with environmental regulations. Proper waste management, use of fuels and lubricants, revegetation of any areas cleared during construction, water use management, and control of construction dust levels will be required.

The NEGU shall ensure the following:

- the contractor's obligation to undertake environmental mitigation measures as defined in the ESMP, all necessary measures to be included in the tender documents and later in the contract documents;
- the cost of recommended environmental and social mitigation measures to be specified as a separate item in the construction budget. This allocation of a separate budget for environmental mitigation measures is essential to ensure their implementation.
- obligation of the contractor to appoint staff responsible for implementing environmental mitigation measures during construction and reporting to the PIU.
- obligation of the contractor to prepare a Site Environmental Action Plan (SEAP) for implementation of the ESMP, identifying individual areas where mitigation measures are to be implemented. This SEAP can be submitted as part of the Site Environmental Action Plan (SEAP) and the Occupational Health and Environmental Protection Plan that are part of the contractor's contractual obligations. In addition, all plans for waste disposal, tree planting, water use should also be prepared for approval by the supervision consultant on behalf of the PIU and
- the contractor, in collaboration with the PIU, will be responsible for addressing any complaints and grievances in relation to construction activities.

Table 6. Environmental and Social Management Plan

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
A. Modernization of the Substation "Tashkent" 500	Environment					
Overhaul and renovation work, Installation of new equipment	1. Water resources					
	1.1. Pollution of water (surface or ground), soil by construction waste	Compliance with repair and construction standards and regulations; - Waste storage only in designated places	EPC Contractor	Current technical control and supervision of construction works	Included in EPC costs	RPIU, PIU, local construction supervision agency, local nature protection authorities
	1.2. Pollution of water from the construction site	- All fuel and chemical storage facilities (if any) should be placed on an airtight base with internal bunding; - Disposal of lubricating oils and other potentially hazardous liquids into the ground or into water bodies is prohibited; - Sedimentation tanks or reservoirs - Spill Response Equipment - Immediate cleaning in the event of a spill of fuels and lubricants and disposal of their residues; - Ensuring removal of surface and drainage runoff from the work site; - Timely cleaning of working sites from construction waste; - Conducting restoration works in the disturbed areas. - Fuel and lubricant tanks must be filled according to the prescribed norms;	EPC Contractor	Periodically, during construction works. Measurement at wastewater discharge site of petroleum products, suspended solids: Once per quarter for 1 year	Included in EPC costs 2,0\$ EPC Contractor	RPIU, PIU, local construction supervision agency, GosSIK, Uzhydromet, or other accredited laboratory

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		-Do not allow waste petroleum products to be discharged onto the terrain, follow 40 refueling and transport regulations				
	2. Land resources 2.1 Excavation works	Restrict the use of heavy machinery to avoid land subsidence and compaction .	EPC Contractor	Current technical control and supervision of construction works	Included in EPC costs	RPIU, PIU, local construction supervision agency.
		During trench excavation soil is stockpiled along the route of water and sewer pipes after pipe-laying Backfilling of trenches with soil compaction Revegetation of disturbed soil cover (ShNK 2.05.02 – 07; KMK 2.05.03-97 2); Prior to the start of main construction works, the fertile soil layer is removed and moved to the site for temporary storage. The construction area is cleared of debris and landscaped upon completion of construction activities.				
	2.2. Soil contamination with construction waste	• Organization of timely collection of construction wastes, their transportation and storage in the designated places	EPC Contractor	Periodically, during construction work	Included in EPC costs	RPIU, PIU, local construction supervision agency.
	2.3. Fuel and oil leakages	• Lubricant containers must be filled according to the regulations; - Do not allow used oil products to be drained onto the terrain; - Comply with 40 refueling and transportation regulations.	EPC Contractor working technicians	Routine monitoring during construction work	Included in EPC costs	RPIU, PIU, local construction supervision agency , local bodies of SES and nature protection authorities
	2.4. Breakthrough of	Urgent work on pipeline rehabilitation and land remediation.	EPC Contractor	Periodically, during	Included in EPC costs	RPIU, PIU, local construction

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
	water and sewer pipes and flooding of adjacent lands			construction work		supervision agency, local bodies of SES and nature protection authorities
	3. Atmospheric air					
	3.1 Dust from building overhaul, dismantling of equipment, from excavation work during building construction and transportation	<ul style="list-style-type: none"> - Dust suppression during the construction period - Washing of roads, construction sites and appropriate cover for transport of waste - When asbestos is detected, personnel must wear protective masks and use all ACM regulations; - Watering of structures to be dismantled during the dismantling process - Demolition work must stop if wind speed exceeds 20 km/h - Do not burn debris and other materials - Cover the loose material body with a tarpaulin during transportation. 	Contractor	Periodically, during construction work Dust measurements once per quarter for 1 year (unscheduled inspections)	Included in EPC costs EPC Contractor 2,0\$	RPIU, PIU, local construction supervision agency, local bodies of SES and nature protection authorities
	3.2. Pollution from exhaust fumes from running machinery and vehicles	<ul style="list-style-type: none"> - The use of construction vehicles and vehicles that meet national or international standards; - Prohibition of parking of vehicles with a running engine; - Avoidance of excessive numbers of vehicles on the premises and smoke emitting vehicles. 	EPC Contractor Traffic inspection	Routine monitoring during construction works Measurements of soot, carbon monoxide once per quarter for 1 year (unscheduled inspections)	Included in EPC costs EPC Contractor 3,0\$	RPIU, PIU, local construction supervision agency, local bodies of SES and nature protection authorities

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
	3.3. Noise, vibration from working machines	<ul style="list-style-type: none"> - No work at the weekend near home or town; - Provision of Noise Protection Kits (PPE) to workers; - Minimize reverse movement of vehicles. - Combustion engines with silencers - Pneumatic tools with silencer - Restrictions on the operation of machinery at night. - Limitation of work time to daytime; (SanPin Ruz № 0267-09 3; SanPin № 0120-01 4). - Provision of construction workers with safety instructions (ShNK 3.06.03 – 08; KMK 3.06.04-97) - Noise levels in nearby residential areas should not exceed 55 dB during the day and 45 dB at night. For workers, the noise level in the workplace should not exceed 70 dB. (SanPiN Ruz № 0267-093; SanPiN № 0120-014); - Locate sources of noise and vibration as far away from buildings as possible; - Noise-suppression devices - Fence off the work area for public safety; - Inform the population about temporary restrictions related to the repair and construction works. 	EPC Contractor	Routine monitoring during construction works Noise measurements 2 times a year	Included in EPC costs 3,0\$ EPC Contractor	RPIU, PIU, local construction supervision agency, local bodies of SES and nature protection authorities
	3.4. Open burning of waste	<ul style="list-style-type: none"> - No incineration of waste or other materials will be carried out on the construction site. 	EPC Contractor	Routine monitoring during construction works	Included in EPC costs	RPIU, PIU, local construction supervision agency, local bodies of SES and nature protection authorities
	4. Household waste	<ul style="list-style-type: none"> - Provide waste containers at each workstation in designated waste storage areas; - Define a waste management with recycling; - Storage of waste in closed containers; - Prohibit the use of damaged containers. Regularly 	EPC Contractor	Constantly	Included in EPC costs	RPIU, PIU, local construction supervision agency, Inspector for Waste

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		<p>check the integrity of the container;</p> <ul style="list-style-type: none"> - Timely removal to landfill; - Training / education 				Management Control under the Department for Ecology and Environmental Protection of Tashkent region
	5. Construction waste	<ul style="list-style-type: none"> - Identification of different types of construction waste: toxic, hazardous, inert, - Marking the containers to quickly determine what kind of waste they contain; - Recycling of waste with further processing ; - Identification of waste storage sites; - Use of soil inert waste during road levelling and repair, etc; - Weekly records should be kept of the types and volumes of waste removed from the site; - Training / education 	EPC Contractor	Constantly during construction	Included in EPC costs	RPIU, PIU, local construction supervision agency, Inspector for Waste Management Control under the Department for Ecology and Environmental Protection of Tashkent region
	6. Hazardous waste	<ul style="list-style-type: none"> - Short on-site storage of hazardous waste, timely disposal or transfer for recycling to specialized organizations that need to be contracted - Training / education - Personal protective equipment <p>Comply with the rules of storage of tanks with fuel and lubricants in sealed packaging</p> <ul style="list-style-type: none"> - Waste disposal should be carried out by a licensed waste management company. <p>Asbestos-containing waste should be placed in polyethylene or non-woven bags and further removed in special sealed containers marked "asbestos".</p>	EPC Contractor	Constantly	Included in EPC costs	RPIU, PIU, local construction supervision agency, Inspector for Waste Management Control under the Department for Ecology and Environmental Protection of Tashkent region

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
	7. Flora					
	Damage of trees and vegetation cover	<ul style="list-style-type: none"> - Restoration of damaged vegetation; -Construction of temporary roads without damage to shrubbery and woody vegetation; - Installation of water and sewerage networks to be carried out avoiding damage to vegetation. 	EPC Contractor	After completion of the work	Included in EPC costs	RPIU, PIU, local construction supervision agency, Inspectorate for Biodiversity Control under the Department for Ecology and Environmental Protection of Tashkent region
	8. Fauna					
	Impacts on fauna	<ul style="list-style-type: none"> - Limiting work at night; -Cutting trees, if necessary, outside the bird nesting period. -Protect fish by protecting surface watercourses from pollution. 	EPC Contractor	Periodically	Included in EPC costs	RPIU, PIU, local construction supervision agency, Inspectorate for Biodiversity Control under the Department for Ecology and Environmental Protection of Tashkent region
	9. Physical cultural heritage					
	Chance finds of cultural value	<ul style="list-style-type: none"> - Termination of work, notification of interested organizations, extraction of finds according to the established rules . - execution of construction works at a distance of at least 100 m from archaeological remains after prior 	EPC Contractor	Constantly, as it is extracted	Included in EPC costs	RPIU, PIU , Regional Inspection for Protection of Cultural Heritage

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		permission.				Objects
	10. Socio-economic aspects					
	10.1. Safe and healthy working conditions, elimination of accidents and incidents	<p>Supervision of the health of workers shall include:</p> <p>(a) medical examinations prior to appointment;</p> <p>(b) periodic medical examinations;</p> <p>monitoring the quality parameters of drinking water;</p> <ul style="list-style-type: none"> - Observance of safety procedures; - Familiarization of employees with hazardous materials (such as asbestos materials, fuel and lubricants, etc.). - Turn off installations that are not in use; - Use machinery and equipment as intended. - Personal protective equipment; - Safety equipment; - Ambulance base. - To ensure the safety of the installation and maintenance work on the substation, provision is made for: <ul style="list-style-type: none"> - Fencing of live parts; - Required isolation distances between live parts and individual connections; - Pedestrian and vehicular traffic; - Electromagnetic and mechanical interlocks to exclude erroneous actions of personnel during operational switching operations; - Protective earthing device; - Remote control of 110 kV circuit breakers, main – 10 kV circuit breakers; -System for control and automation of operating modes; -Short-circuit and overvoltage protection: - Working and emergency lighting. - If a worker has been tested positive or have been 	EPC Contractor	Constantly	Included in EPC costs	RPIU, PIU, local construction supervision agency

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		in contact with a positive COVID-19 case, the worker will be required to undergo the 14-day quarantine isolation period.				
		<p>In addition to the Codes of Conduct for GBV/Human Trafficking/SEA, the Contractor will also prepare a Code of Conduct to describe the expected behaviors of their project worker in relation to the local communities and their social sensitivities.</p> <p>-Compliance with regulations and instructions to ensure electrical and fire safety.</p> <p>-In order to reduce the exposure of personnel to electric fields, it is necessary during construction:</p> <p>a) use outdoor switchgear metal structures made of galvanized, aluminized or aluminum elements;</p> <p>b) ladders to climb the metal gantry cross-bars should be placed inside the metal gantry posts (the ladders placed outside should be fenced with shielding devices, ensuring permissible levels of electric field strength inside).</p> <p>B) Outdoor switchgear bus arrangement must be rigid, made of aluminium alloys.</p>				
	10.2. Traffic accidents on public roads	<p>-Regular maintenance and control of vehicles</p> <p>- Alarm, lighting, safety signs, barriers and signalers;</p> <p>- Information campaigns to improve safety</p> <p>- Emergency action plan</p>	EPC Contractor traffic police	Routine monitoring during construction works	Included in EPC costs	RPIU, PIU, traffic officer
	10.3. Blocked access	<p>- Provision of an alternative road to bypass the construction site, if available</p> <p>- Organize operations in such a way that access to residences, income-generating assets and public facilities is not blocked</p>	EPC Contractor	Routine monitoring during construction works	Included in EPC costs	RPIU, PIU, traffic officer

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
	10.4 Unequal opportunities for vulnerable groups of workers	-Promote fair treatment, non-discrimination and equal opportunities for workers. For large-scale construction – Ensure that a Contractor’s LMP is drawn up and implemented. -Develop a code of conduct to be followed by the workforce in relation to the worksite and surrounding community. -Worker behavior and community awareness on GBV -Create a GBV-sensitive grievance mechanism -Prohibit forced labor, target local workers where possible	EPC Contractor	Routine monitoring during construction works	Included in EPC costs	RPIU, PIU
B. Operation and maintenance	Environment					
Modernized substation	Pollution of soil and water, untreated sewage, used transformer oil.	- Strictly regulated waste collection and disposal to designated locations. - Ensure that surface and drainage runoff is diverted away from the work site; - Timely cleaning of work areas from construction waste.	Local staff, MEN (MES)	Regularly, according to a set schedule	NEGU	MEN, Tashkent Regional Committee for Ecology and Environment Protection, SES
	Atmospheric air pollution	- No burning of rubbish or other materials will take place at the substation - No parking of vehicles with the engine running; - Avoiding excessive amounts of vehicles in the area and vehicles emitting smoke.	Local staff, MEN (MES)	Regularly, according to a set schedule	NEGU	MEN, Tashkent Regional Committee for Ecology and Environment Protection, SES
	Household and industrial waste	- Provision of sites for temporary storage of waste; - Timely removal to landfill or recycling; - Water supply in case of fire; -Automatic fire extinguishing system automatic fire extinguishing system; - Composting of sweepings from cleaning operations;	Local staff, MEN (MES)	Regularly, according to a set schedule	NEGU	MEN, Tashkent Regional Committee for Ecology and Environment Protection, SES

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		-Control the storage of fuel and oil containers in a sealed container.				
	-	<ul style="list-style-type: none"> • Develop environmental and other criteria regulating maximum permissible environmental loads in a timely manner; - Observe treated wastewater discharge regimes and established quality standards, and protect water bodies from pollution and fouling; - Discharge of municipal, drainage and other wastewater with the permission of the nature protection authorities in accordance with the established procedure; - Introduce waste-free and low-waste technologies, reduce generation of industrial and household waste, decontaminate, recycle it, follow the rules for its sorting, storage, disposal and recycling. 	Local staff, MEN (MES)	Quarterly monitoring of treated wastewater discharges. Periodic monitoring by nature protection authorities for compliance with wastewater discharge conditions	3 \$ NEGU	<p>MEN, Tashkent Regional Committee for Ecology and Environment Protection, SES</p> <p>Water Inspector under the Department for Ecology and Environmental Protection of Tashkent region</p>
	Vegetation	<ul style="list-style-type: none"> - Greening of the area around the substation; -Restoration of trees in case of felling; -Organisation of irrigation and control of vegetation condition. 	Local staff, NEGU	Constantly		<p>NEGU Inspectorate for Biodiversity Control under the Department for Ecology and Environmental Protection of Tashkent region</p>
	Emergency situations	<ul style="list-style-type: none"> - Ambulance base. - To ensure the safety of the installation and maintenance work on the substation, provision is made for: - Fencing of live parts; - Required isolation distances between live parts and individual connections; - If a worker has been tested positive or have been 	Local staff, NEGU	Constantly during operation		Local staff, NEGU

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
		<p>in contact with a positive COVID-19 case, the worker will be required to undergo the 14-day quarantine isolation period.</p> <ul style="list-style-type: none"> - In addition to the Codes of Conduct for GBV/Human Trafficking/SEA, the Contractor will also prepare a Code of Conduct to describe the expected behaviours of their project worker in relation to the local communities and their social sensitivities. - Pedestrian and vehicular traffic; - Electromagnetic and mechanical interlocks to exclude erroneous actions of personnel during operational switching operations; - Protective earthing device; - Remote control of 110 kV circuit breakers, main – 10 kV circuit breakers; - System for control and automation of operating modes; -Short-circuit and overvoltage protection: - Working and emergency lighting. - Compliance with regulations and instructions to ensure electrical and fire safety. -In order to reduce the exposure of personnel to electric fields, it is necessary during construction: <ul style="list-style-type: none"> - ladders to climb the metal gantry cross-bars should be placed inside the metal gantry posts (the ladders placed outside should be fenced with shielding devices, ensuring permissible levels of electric field strength inside). - Safety awareness campaigns - Emergency Action Plan. 				
	Socio-economic					

Stage	Problem	Mitigation measures	Responsible organizations	Monitoring activities	Cost, thousand \$	Responsible bodies for monitoring the implementation of the work (in order of participation)
	aspects					
	Occupational health and safety	<ul style="list-style-type: none"> - To develop a comprehensive health and safety improvement program for service personnel; - Introduction of an effective system for monitoring the health of the population; - Installation of an automated security system; - Worker health supervision should include (a) pre-employment medical examinations; (b) periodic medical examinations; Compliance with safety regulations; - familiarizing employees with the procedure of working with hazardous materials (such as asbestos materials, fuel and lubricants, etc.). - Personal protective equipment; - Safety equipment; - Constant training. 	Local staff, MEN (MES)	Periodic control		NEGU, MEN, SES.
	Threats to the health of staff	Operation of transformer equipment in compliance with established standards.	Local staff, MEN (MES)	Monthly control		NEGU, Local staff, MEN

7. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Environmental and social monitoring is an important part of environmental management, both during the construction and operation phases. The Environmental Monitoring Plan (EmoP) deals with substation modernization in general, installation of equipment, major construction and reconstruction works, public interaction and safety assurance. Important parameters of the monitoring program are air, noise and surface water quality in the project area.

In response to the environmental impacts identified during the surveys, an Environmental Monitoring Plan has been developed and is presented in Table 8. The contract documents will contain a list of all necessary mitigation measures and a time frame for monitoring the implementation of these measures. Part of the monitoring will be the supervision of the design activities in order to control the compliance of the Contractor's actions with the contract during construction.

The Construction Supervision Consultant, in cooperation with the PIU during project implementation, shall:

- Develop an environmental audit protocol for the construction phase and develop a detailed monitoring and management plan;
- Regularly supervise environmental and social monitoring and submit quarterly reports: the main parameters to be monitored are set out in Table 6, and
- Regularly monitor the project activities, and submit quarterly reports based on monitoring data and laboratory analyses. The main parameters to be monitored are set out in Table 6. The Contractor and the Construction Supervision Consultant will be responsible for collecting the environmental monitoring data for the appointed organization (e.g. Goskomekologiya).

The following measures will be taken to ensure compliance with the environmental monitoring program during project implementation:

The tender and contract documents will clearly set out the Contractor's obligations for the environmental measures presented in Table 5 and will be added to the contract specification;

The costs of the recommended environmental and social mitigation measures should be included as an element in the Bill of Quantities (BoQ). This will ensure that there is a specific budget line item for environmental mitigation. At the time of procurement, the Contractor will be requested to include these costs in its tariffs and to present the mitigation costs as a separate line item in the BoQ.

The PIU will employ an environmental and sociological supervising consultant who will be responsible for the implementation of the Contractor's environmental and social, safety and health responsibilities. The consultant will cooperate with the local administration.

7.1. Estimates for proposed environmental protection measures

The environmental costs of the project should be included in the project cost and include the following: (i) costs of financing studies, consultations, and disclosures for the updated ESMP (ii) costs of implementing mitigation measures, including tree planting, and (iii) costs of financing environmental monitoring and reporting. The table below summarises the costs required to mitigate environmental and sociological measures and monitoring.

Table 7: Costs of environmental protection for mitigation and monitoring

Baseline Monitoring

Activity / Item	Frequency	Location & number of samples or selections.	Cost per unit	Cost
Air quality	once a quarter	2 at the substation, 2 near the nearest settlements – Total sample = estimated 4	100\$ US	400 \$ US
Water Quality	once a quarter	At least 2 water samples in the nearest canal at the wastewater discharge site = 2 – Total sample estimated 2	50 \$ US	100 \$ US
Soil contamination	once a quarter	At least 2 places in the project area = 2 samples	75 \$ US	150\$ US
Noise	once a quarter	Road starting point, completion point and vulnerabilities as determined by the PTN. Total number – estimated 5	40 \$ US	200\$ US
Total for the quarter				650 \$ US

Proposed environmental and social monitoring programs.

Parameter	Monitoring parameters	Location	Measurements (incl. Methods and equipment)	Frequency of measurement	Responsibilities (Including Review and Reporting)	Cost
Air quality	NOX TSP CO Dust	In project areas, access roads	Day monitoring, at least 4 measurements	Monthly for dust, other parameters once a quarter	Environmental specialist submits a report to the PIU	2000 \$
Noise	Noise	In project areas, access roads	Day monitoring, at least 4 measurements	Monthly	Environmental specialist submits a report to the PIU	2000 \$
Water Quality	Petroleum products, suspended solids	Nearest canal at wastewater discharge site	Portable Devices	Quarterly	Environmental specialist submits a report to the PIU	2000 \$
Socio-economic parameters	Complaints received on GM	Communities related to the project area	Number of complaints submitted and number resolved.	Monthly	RPIU	No direct costs
Total						6,000 \$

BOD = biochemical oxygen demand, CO = carbon oxide, Nox = nitrogen oxides, pH = expression of basic or acidic state, TSP

= total suspended solids.

Institutional strengthening and training

Strengthening of institutional activities	Position(s) (institutions, contractors, supervision consultants)	Schedule	Cost estimates
Mitigation	Contractors, project engineers, NEGU, MEN, PIU/RPIU	10 days	10,000 \$
Monitoring	State Committee on Ecology, project engineers, members of the municipality	5 days	5,000 \$
Environmental and social assessment (principles, methodology)	State Committee for Ecology, NEGU, MEN, PIU/RPIU	10 days	10,000 \$
TOTAL			25,000 \$

Table 8. Environmental and Social Monitoring Plan

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
PRE-CONSTRUCTION PHASE						
Soil contamination.	Remove, preserve and reuse the topsoil according to the most applicable practice; the soil should be preserved in such a way as to prevent erosion or loss of fertility; Ensure that spills of oil products and other substances cannot occur and, if they occur, immediate action is taken to minimize the impact on the soil. Storage of construction materials properly in designated areas.	Substation project area	Check the preliminary design	Once or more depending on the revision of the project	PIU, NEGU	No data
Public Access	Access is provided to the local population, including pedestrians, non-motorized vehicles, livestock	Access not hindered/ Provision of alternatives	Check the preliminary design and maps	Once or more depending on the revision of the project	PIU, NEGU	No data
Infrastructure	Avoid impacts on existing/planned infrastructure.	Infrastructure is not affected	Check the preliminary design and maps	Once	PIU, NEGU	No data
Embankments/ constructions	Design embankments, crossings, culverts, etc.	Embankments, etc., meet the requirements	Check the preliminary design and maps	Once	PIU, NEGU	No data

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
Noise barriers	Noise protection is revised during design	Noise protection enabled where it is rational/effective	Check the preliminary design and maps	Once	PIU, NEGU	No data
Sources of materials and transportation	Ban the extraction of materials and/or violation of protected areas. The bidder must identify the sources of materials, specify transportation methods, provide a real breakdown of costs, including the ongoing maintenance and rehabilitation of access roads, dirt roads.	Requirement of contract. The Bidder provides information.	Check	Once or more depending on the result	PIU, NEGU	No data
Pollution control on the highway	Application of pollution control measures	The measures are included in the project.	Check	Once or more depending on the result	PIU Environmental specialist	No data
Access to information/public relations	Inform the population about construction progress. Successful implementation of the complaints mechanism. Complaints are accepted and dealt with quickly.	Information materials must be produced. A complaint mechanism is prescribed. Complaints officers and complaints committees have been identified. Complaint logs exist and are updated.	Sample checks, feedback from the local population / NGOs, feedback from the engineer	Approximately once a month during the entire construction period, most often with complaints from the public	Environmental and social specialist, reports to PIU	Included in the budget of the consultant on technical supervision
CONSTRUCTION STAGE						
Minimization of inconvenience to the local population	No noisy work near settlements between 20:00 and 6:00 and on public holidays. Maximum noise level at site	Minimal complaints	Sample checks, feedback from the local population / NGOs, feedback	Approximately once a month during the entire construction period, most	Environmental specialist reporting to the PIU	Provision must be foreseen by the contractor

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
	boundary 70 dB(A). Construction machinery/equipment are equipped with noise and exhaust gas protection. Access for local people, including pedestrians, non-motorised vehicles and livestock is ensured. Rubbish and waste is removed from construction campsites/areas by contractor. Waste is removed from construction towns/areas by the contractor.		from the engineer.	often with complaints from the public		
Health and safety	Availability of drinking water, toilets, showers and canteens. Training on health and HIV/AIDS; COVID19 Ambulance equipment and training. Personal protective equipment and training. Training of safety on construction and emergency response. Accidents registration logs. Public safety measures.	Everything described has been provided, training has been conducted.	Sample checks, training documents, accident protocols, feedback with the engineer and workers.	Approximately once a month during the entire construction period, most often with complaints from the public	Environmental specialist reporting to the PIU	Included in the budget of the consultant on technical supervision
Site Clearance	When clearing vegetation, keep as many trees and vegetation as possible.	No damaged trees / felled without permits.	Sample checks, feedback from the engineer and workers	Approximately once a month during the clearing of the site	Environmental specialist reporting to the PIU	See above

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
Infrastructure	Damage to infrastructure	No damage found	Sample checks, feedback from the engineer	Approximately once a month during construction	Environmental specialist reporting to the PIU	See above
Drainage control	Site Drainage Plan Settling ponds Standing water	A drainage plan for the site exists and is being implemented. There are no silted/muddy discharges of water outside the site into water bodies. No oil film on bodies of water near the site. No standing water on/off site.	Sample checks, local community / NGO feedback, engineer feedback.	Approximately once a month during construction	Environmental specialist reporting to the PIU	See above
Control of fuel and chemical pollution	The rules about leak prevention. Regulations on fuel storage, transport and washing of the vehicle. Prohibition on washing the vehicle, in rivers/wetlands. Storage of lubricants and chemicals in wetlands is not permitted and, if unavoidable, must be stored in specially constructed, embankment protected areas.	All rules have been developed and approved. No untreated work-related spills of lubricant/bitumen/cement/concrete on site. Regulations on fuel storage, transport and washing of the vehicle exist and are enforced. Workers are aware of the ban. Vehicles are not washed in rivers/wetlands. Any unavoidable storage of oils and chemicals in wetlands will be organized in specially constructed, embankment protected areas.	Sample checks, local community / NGO feedback, engineer feedback.	Approximately once a month throughout the construction period, most often in the case of complaints from the population	Environmental specialist reporting to the PIU Π	See above

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
Waste Management	Garbage and waste in/from work camps and territories is cleaned up by the contractor. Storage of waste in wetland areas is not permitted.	Waste management plan exists and is being implemented Garbage and waste are disposed of Wastes are not stored in wetlands The disposal sites should be visited and monitored periodically.	Sample checks, local community / NGO feedback, engineer feedback.	Approximately once a month throughout the construction period, most often in the case of complaints from the population	Environmental specialist reporting to the PIU	See above
Household waste	Household waste from construction camps and the canteen will be collected by a licensed organization. All construction waste must be removed from the site and special managed landfills must be established under the supervision of local authorities. Workers' waste should be removed from the site on a regular basis. On completion of the contract, all temporary structures should be removed from the site.	There is no local impact unless there is accommodation near existing settlements. Construction camps are being cleared.	Sample checks, Feedback from workers and the engineer	Regular monthly monitoring of the site and waste collection and disposal activities by Technical Supervision Consultants	Technical Supervision Consultant and nature protection authorities	
Management of Hazardous Materials, Fuels and Lubricants	Hazardous waste (or chemical waste) will be properly stored, treated and disposed of. Hazardous waste will be stored in designed locations where warning signs will be posted. A maximum load limit for trucks carrying hazardous	Rivers and project areas are being cleaned.	Sample checks, Feedback from workers and the engineer	Monthly monitoring of the site and waste collection and disposal activities by Technical Supervision Consultants	Technical Supervision Consultant and nature protection authorities	

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
	wastes should be developed.					
Wastes to be recycled	Materials to be recycled, such as wooden trench boards, steel, timber, fasteners, packaging materials, etc., will be collected and sorted from other waste sources on site. The collected materials to be recycled will be reused for other projects or transferred to waste treatment plants for recycling.	The project corridor is being cleared.	Sample checks, Feedback from workers and the engineer	Regular monthly monitoring of the site and waste collection and disposal activities by Technical Supervision Consultants	Technical Supervision Consultant and nature protection authorities	
Construction waste water	Mitigation measures will be included in construction contracts to prevent spills and leakages of construction materials (e.g. bitumen, petroleum products, chemicals, fly ash, cement, sand and aggregates) during transport. Stocks of construction materials such as bitumen, petroleum products and chemicals must be properly covered or placed under a shelter to prevent contamination from rainfall.	The project corridor is being cleared.	Sample checks, Feedback from workers and the engineer	Regular monthly monitoring of the site and waste collection and disposal activities by Technical Supervision Consultants	Technical Supervision Consultant and nature protection authorities	

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
Local road network management	Dirt roads Prior to construction, the actual condition of all dirt roads should be assessed and photographed (possibly by PIU in cooperation with the Engineer). The requirement to restore all temporarily used dirt roads to their original condition.	Dirt roads are photographed Roads are pre-stressed where necessary. Damage is being repaired. Roads are restored to their original state after use.	Sample checks, local community/NGO feedback, engineer feedback	Approximately once a month throughout the construction period, most often in the case of complaints from the population	Environmental specialist reporting to the PIU	See above
Road safety		A traffic management plan exists and is being executed. No increase in traffic accidents. No unnecessary traffic disturbance.	Sample checks, local community/NGO feedback, engineer feedback	Approximately once a month throughout the construction period, most often in the case of complaints from the population	Environmental specialist reporting to the PIU	See above
Noise Control	No noisy work in the vicinity of settlements between 20:00-06:00 and on public holidays Maximum noise level at the boundary of the site is 70 dB(A).	A noise control plan exists and is being implemented. There are no too noisy equipment / vehicles on the site. Workers working on noisy equipment/working on noisy vehicles use appropriate PPE.	Sample checks, local community/NGO feedback, engineer feedback	Approximately once a month during the entire construction period – including nighttime and holidays, most often with complaints from the public	Environmental specialist reporting to the PIU	See above
Air Pollution Control	Air Pollution Control	Workers who work with equipment / perform work that is polluting the air use appropriate PPE.	Sample checks, local community/NGO feedback, engineer	Regular inspections of subcontractor sites asphalt plant, quarries,	Environmental specialist reporting to the PIU	See above

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
			feedback	etc.). Approximately once a month throughout the construction period, more often with complaints from the population.		
Air Quality Baseline Survey.	Baseline air quality monitoring should be conducted immediately after the date of acceptance of the application, to the extent practicable, to determine air pollutant levels at specified monitoring sites. Proposed locations require the approval of an environmental specialist.	Complaints received through the GM.		The results of the monitoring should be presented within two (2) working days after the completion of the monitoring. Appropriate actions shall be taken upon the results of the monitoring. The final results shall be presented in the required initial environmental baseline report.	Environmental specialist should be responsible for the daily problems of managing environmental measures. The contractor should not start work on the site until the Environmental specialist has started work on the site.	Tracking and reporting costs should be part of the contractor's proposal
Dust control	Dust control Dirt roads in residential areas need to be watered/cleaned to reduce dust. Dust-producing materials should be covered during transport.	Dust control plan exists and is being implemented. No dust on dirt roads in residential areas. No dust from construction machinery transporting materials.	Sample checks, local community/NGO feedback, engineer feedback	Approximately once a month throughout the construction period, most often in the case of complaints from the	Environmental specialist reporting to the PIU	See above

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
				population		
Cultural heritage/archeological finds	Plan for cultural/archeological finds	A plan for cultural/archaeological finds exists and is being implemented, workers are familiar with the plan.	Sample checks	Once	Environmental specialist reporting to the PIU	See above
Greening	Felled trees must be replaced by planted trees.	Tree planting and care	Sample checks	Once, at the end of construction	Environmental specialist reporting to the PIU	See above
POST-CONSTRUCTION/ OPERATION PHASE						
Impacts on biodiversity	Successfully implemented project measures to minimize impacts on biodiversity.	Minimum change in original biodiversity	Reports on biodiversity monitoring in after-construction and operational phase	Monitoring once a year (summer) for five years after the route is put into operation.	MEN/ local NGOs with WB assistance	Included in the annual PIU's operation and maintenance budget
Traffic management	Compliance with speed modes and proper signage setting Training and sensitization of the local population. Any additional pedestrian crossings should be investigated	In places of access to construction near populated areas	Post-construction and operational monitoring reports	Regular reporting of any accidents and complaints	Road maintenance company	Included in the annual PIU's operation and maintenance budget
Environmental Monitoring	- Plan of accidental spills - Implementation of measures to minimize the risks of ground and surface water pollution. - Speed Monitoring of		Post-construction and operational monitoring reports	Regular reporting (monthly / annually)	PIU	Included in the annual PIU's operation and maintenance budget

Problem	Mitigation measure	Efficiency Indicator	Means of checking	Frequency	Responsible authority/individual	Costs (US \$)
	Vehicles. - Noise monitoring program. - Air quality monitoring program. - Water quality monitoring program. - Waste management monitoring program: -regular waste disposal, - Traffic accident log -Registration of complaints from the public (appointment of a community liaison officer).					

8. PUBLIC CONSULTATIONS AND INFORMATION DISCLOSURE

8.1. General information

In accordance with the ESF's , a Stakeholder Engagement Plan (SEP) was developed for overall project. The Plan provides a framework for the engagement with stakeholders throughout the project, including guidance for the site-specific consultations with stakeholders.

This section describes the disclosure, consultation and participation that took place as part of the ESMP process, as well as the results of these activities and what should be planned throughout the duration of the Project.

The section consists of the following paragraphs:

- Methodology/tools used to inform and involve the public in the environmental and social assessment process.
- Discussion of issues raised by different stakeholders.
- Responses to stakeholders on how the project could address their concerns raised during the consultation process.
- Documentation of the public consultation, including dates, names, topics and summary of discussions, and results.
- Identification of measures for continued consultation during the implementation of the environmental management program.

8.2. Principles of consultation

Early and on-going consultation, disclosure and involvement of key stakeholders is a basic requirement for WB-funded projects.

The specific objectives of public disclosure and consultation are:

- Ensuring that all legal and international financial requirements related to consultation have been met;
- Inclusion of all stakeholders in project planning, to improve project plan, implementation and monitoring;
- Encouraging an open dialogue with the local community, and especially with project affected persons in the locations where the project is located;
- Ensuring that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- Keep all interested and affected parties informed of project progress; and
- Providing a Grievance Mechanism to receive and address complaints.

Public consultation is based on the principles that public involvement should be free from outside influence, interference, coercion and intimidation, Public consultation should be carried out with timely, relevant, understandable and accessible information.

Consultations should always be well planned and based on the principles of respectful and meaningful dialogue.

8.3. Stakeholder engagement activities

General principles

Stakeholder engagement will be carried out throughout the project development and implementation period to identify and incorporate the views of stakeholders and those who may be affected by the project throughout its life cycle, and to ensure open and transparent two-way communication between the project proponent and stakeholders. The approach to engagement is designed to meet both national and international requirements.

The following general principles will guide stakeholder engagement activities:

- Content of the public consultation documents will have accessible and adequate information about the Project and will not raise excessive concerns (regarding potential negative impacts) or expectations (regarding potential positive impacts such as job creation, etc.);
- Written information will be accompanied by visual illustrations and explanations necessary to understand the project;
- Information will be disclosed in the local language(s), where relevant, and in a manner that is accessible and culturally appropriate, taking into account any vulnerable groups;
- Any issues raised will be explained and answered;
- If key issues of particular concern arise, workshops may be offered to explain technical processes, assessment methods and quality assurance measures to verify results and ensure compliance with mitigation procedures; and
- Efforts will be made to explain not only the proposed draft and process of the ESMP, but also the applicable national laws and regulations, international principles and standards and how compliance will be addressed. The proposed project and the ESMP have been developed on the basis of national laws and regulations, international principles and standards.

8.4. Stakeholder Engagement

The main issues raised by participants during the initial meetings and consultations which were held on 7th April 2021 covered the following topics:

- Whether houses will be affected during construction,
- Impacts on the natural environment and population during construction work
- Social and economic benefits of the project
- Whether a stable electricity supply will be available after the project implementation
- Whether trees will be felled during construction work.

In the opinion of the population, in order to ensure a comprehensive approach to solving electricity supply problems, the main areas that need to be focused on at present are, firstly, the improvement, repair and replacement of existing substation equipment, as it is obsolete; secondly, the repair and construction of power transmission lines. Thus, the current Project is fully consistent with the expectations and needs of the Tashkent region population.

8.5. Grievance Mechanism (GM)

For the project, open and transparent communication between the Receiver and its stakeholders is an essential element of good international practice. Effective stakeholder engagement can enhance the social and environmental sustainability of a project, improve its perception and contribute substantially to its successful development and implementation.

Project-related grievance procedures serve to provide an effective and systematic mechanism for responding to questions, providing feedback and addressing complaints from those affected by project activities.

The timely resolution of grievances and complaints in a satisfactory manner is an important project implementation process. The project's Grievance Mechanism will seek to resolve grievances and complaints and engage with all stakeholders.

Anyone who has experienced an impact or has concerns about project activities can use the GM and get answers to questions that have arisen.

In Uzbekistan, the mechanism for consideration of citizens' appeals and complaints (GM) is widely used in accordance with the Law of the Republic of Uzbekistan №ZRU-378 dated 03.12.2014 "On appeals of legal entities and individuals". Interested parties can apply via the Internet to the portal <https://my.gov.uz/ru>. Also, since 2017, "People's Reception Offices" have been functioning, where citizens can address their concerns.

The project site shall have a log book to record citizen appeals and actions to resolve the issue raised.

The subproject's GM and Contractor's GM shall be framed on the overall project GM (as described in the SEP), and shall have the possibility of multiple uptake channels including a hotline.

The GM will consist of three levels, as outlined below.

Table 9. Grievance redresses mechanism and its levels

Level/steps	Process
<p>Level 1-</p> <p>Site engineer of NEGU, the working office of Contractor, makhalla committee, and district khokimiyats</p>	<p>The aggrieved person applies directly to working office of Contractor or Site Engineer of NEGU. Alternatively, affected person may apply to local Makhalla committee or khokimiyats, whose duties are defined by national legislation.</p> <p>PIU Safeguards specialist will be in charge of recording/collecting/receiving and registration complaints from makhalla committee, Contractor offices, site engineer(s) and from khokimiyat on a weekly base. After registration of received complaints, the PIU Resettlement specialist will review the nature/specificity of the complaint and will forward it to the relevant party for resolving. In parallel, the PIU Resettlement specialist will inform the PIU in Tashkent about the received complaint and further actions undertaken for its resolution. Depending on the nature of a complaint, it may go to the Contractor, Land Cadaster bodies, Makhalla committees, district branches of Nature Protection Committee or newly created "Centralized Fund for the Compensation of Losses of people and legal entities after land acquisition for the needs of the state and society." At this level, the complaint should be resolved in two weeks.</p>
<p>Level 2 –</p> <p>PIU in Tashkent and a Grievance Redressal Committee headed by the PIU/NEGU</p>	<p>In case the grievance was not redressed at the first stage or the applicant is not satisfied with the decision made/solution, s/he can submit the grievance directly to the PIU secretariat in Tashkent. By established procedure, the secretariat of the PIU will review the complaint and will forward complaints to the respective department to a made decision on its redress. In case the grievance is not related directly to the project, any further instance will be recommended to the applicant where s/he should apply for the decision making.</p> <p>If the complaint requires more time and resources for resolution, the</p>

Level/steps	Process
	PIU may establish a Grievance Redressal Committee with following members such as representatives from secretariat PIU and NEGU high-level management staff, district Khokimiyat, cadastral and Nature protect departments etc. All complaints will be resolved in 15 days, and in case additional details are required, a maximum of 30 days will be used to resolve and close the complaint with prior notification of complainant.

If the issue was not solved or the applicant is dissatisfied with the decision/resolution, an aggrieved person at any stage of the GM process may submit the grievance to Economic Court (Court of Law) where a decision will be made by relevant national legislation.

Complaints may be made at any time during the preparation and implementation of the project. However, the project grievance mechanism does not prevent affected persons from contacting the national/state legal system to resolve their grievances at any stage of the GM process. Submitting a complaint, comments and/or suggestions is free of charge.

The Contractor shall include information on grievances in the monthly progress reports submitted to the PIU, which in turn will include summarised information in the semi-annual social monitoring reports (SASMRs).

Communication

Prior to commencing work at the site, the Contractor shall:

- Notify GM to the public in the project impact area.
- Establish and publish a 24/7 grievance hotline.
- Ensure that names and contact numbers of representatives, PIU, MEN and Contractor are posted on notice boards outside the construction site.

The grievance redress process has been formally introduced during the public consultation. The Grievance Mechanism will also be presented during routine community meetings in the Project area during the construction stage.

ANNEX 1. Minutes of the Public Consultation

Public consultation

Place/format: NEGU Office in Tashkent in video conference format.

Date: 7 April 2021

Electricity Sector Transformation and Resilient Transmission Project (ESTART)

Public hearing: Disclosure and public discussions on the Social and Environmental Instruments

Prepared by: "Ekostandart Ekspert Environmental and Social Specialists: Olga Vakhidova-Mordovina and Zilola Kazakova

Presented by: Zilola Kazakova

Target audience: Target audience: Representatives of regional and local authorities involved in environmental and social activities of the project were invited (specialists of the Department of Land Resources and State Cadastre, Committee for Ecology and Environmental Protection, Ministry of Energy of RUz, representatives of the Khokimiyat, etc.). The list of participants is attached. NEGU specialists and residents of settlements potentially to be affected by the planned substations, TLs, access roads were also invited.

The oral presentation was made in the local language (Uzbek).

The following topics were discussed:

Description of the project and its components; potential project planning activities, national environmental, social legislation and relevant WB requirements; identified social and environmental impacts and mitigation measures; developed social and environmental safeguards documents (ESMF, ESMP, RF, LMR and SEP) and the need to develop an ESMP for each sub-project, based on the above framework documents; Grievance Mechanism and project contact information for affected people and organizations; further stages of project implementation.

After the discussion, the Consultant shared with the participants a presentation and provided contact numbers of project representatives where participants of the public consultations can contact the Consultant or a representative of the PIU in case of any questions and necessary clarifications.

The participants were then given the opportunity to express their opinions and ask questions. The consultants took turns addressing the representatives of each project region. Representatives of the NEGU regional branches reported that the information presented on the project is clear and understandable and that they had already received information on the technical and project data during the initial consultations during the field visit.

Participants discussed the following topics and questions:

#	Topic / Question	Answers/Discussions
1	Is it necessary to have a complaints and suggestions log at each project site?	Each regional NEGU branch should keep a register of complaints and appeals. The issue of complaint logging is very important in the implementation of project activities.
2	Placement of project socio-environmental documents, access to project information	All developed project documents have been posted on the NEGU and World Bank website, a detailed presentation and brochure was sent to each project region for further distribution to residents and other PAPs.

After the discussions, the project consultants asked female participants to also participate in consultations on gender equality and GBV as part of project activities and events.

Public consultation

Place/format: NEGU Office in Tashkent in video conference format.

Date: 7 April 2021

"Electricity Sector Transformation and Resilient Transmission" Project (ESTART)

Public consultation: On Gender Equality and Gender-Based Violence in the Context of Project Activities

Prepared by: Ekostandart Ekspert Environmental and Social Specialists: Olga Vakhidova-Mordovina and Zilola Kazakova

Presented by: Zilola Kazakova

Target audience: NEGU Women specialists and women residents of the communities which may potentially be affected by the substations, transmission lines, access roads were invited to attend the consultations. The consultations were attended by 28 women, with the following composition - 10 female employees of the regional MEN and 18 female residents of the project area.

The oral presentation was made in the local language (Uzbek).

The following topics were discussed:

Issues of gender equality and gender-based violence in the context of this project and women's lives in today's society, the frequency of individual consultations with women employees of the NEGU and residents in the project areas, training on gender topics for NEGU staff and regional units, the need to establish a gender focal point at regional level, reviewing recruitment and promotion policies, ensuring comfortable and safe working conditions for women, with sufficient latrine facilities with a sufficient number of restrooms and showers, assistance in the opening of the women's association and its integration into the trade union organization of the NEGU.

The consultants also reported that the Project will contribute to reducing gender bias in the

energy sector by including specialized knowledge and capacity building services that do not limit women to certain gender roles and social expectations. The project will include monitoring these actions. As part of the project, the NEGU will develop an action plan on GBV, the activities of which will also be integrated into the contractors' ESMP. Project training and capacity building activities will include specific GBV-focused modules so that all project staff and key stakeholders have a better understanding of GBV risks and required mitigation measures within the project.

After the discussion, the Consultant provided the contact numbers of the project representatives where participants in the public consultations can contact the consultant or the PIU representative in case of any questions and necessary clarifications.

The participants were then given the opportunity to express their opinions and ask questions. The consultants took turns addressing the representatives of each project region.

Participants discussed the following topics and questions:

#	Topic / Question	Answers/Discussions
1	On the side of the Syrdarya Regional Branch, staff raised the issue of the need to improve sanitary and hygienic conditions in the workplace for women.	The Consultant noted that the project was to consider providing a comfortable and safe working environment for women, with sufficient latrines and showers, and that the appeal would be passed on to the NEGU management.
2	Participants have some concerns about the confidentiality of the information discussed during these consultations.	The consultants advised that there is no need to be afraid to express their opinions to female employees of NEGU enterprises, local female residents, that the environment and conditions of these consultations provide for free expression of their complaints, concerns and possible risks related to the project implementation. Women will be treated with strict confidentiality and separate complaints mechanisms will be implemented.
3	What kind of training will be provided on these issues?	The NEGU will develop an action plan on GBV, the activities of which will include training among women employees of the NEGU, women of project areas, employees of contractors.

The participants reported that gender-based violence is a very topical issue in everyday life, but that mentality and traditions do not allow for an open discussion, but they are grateful for the opportunity to speak out.

List of participants of public consultation




Сана: 07.04.2021 йил
Худуд: "Ўзбекистон МЭТ" АЖ Андижон МЭТ филиали
Лойиха номи: "Ўзбекистон МЭТ" АЖнинг №01-04-28/63 сонли Факсограммасига асосан

Жаҳон банки интироқида "Магистрал электр тармоқлари погтастанцияларини замонавийлаштириш ва реконструкция қилиш" иниетиция лойиҳасини амалга ошириш чора тадбирлари тўғрисидаги қарорга асосан видео конференцияда катнашувчилар рўйхати

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Алибеков Фарходбек	Бош муҳандис	Андижон МЭТ филиали	99-607-51-81	<i>[Signature]</i>
2.	Мирсанов Нумонжон	МКК бошлиғи	Андижон МЭТ филиали	99-437-04-13	<i>[Signature]</i>
3.	Хайитова Дилфуза	ИСК муҳандиси	Андижон МЭТ филиали	99-087-55-51	<i>[Signature]</i>
4.	Умуралиев Рустамжон	Юрист	Андижон МЭТ филиали	99-994-10-04	<i>[Signature]</i>
5.	Мадумаров Мадаминбек	Электронтёр	Андижон МЭТ филиали	97-235-07-15	<i>[Signature]</i>
6.	Иудашева Барнохон	Техник	Андижон МЭТ филиали	97-992-04-45	<i>[Signature]</i>
7.	Юсупова Шахноза	Иктисодчи	Андижон МЭТ филиали	99-086-20-33	<i>[Signature]</i>
8.	Мухтарова Наригеза	ХБ муҳандиси	Андижон МЭТ филиали	98-780-05-23	<i>[Signature]</i>





Сана: 07.04.2021 йил
Худуд: "Ўзбекистон МЭТ" АЖ Андижон МЭТ филиали
Лойиха номи: "Ўзбекистон МЭТ" АЖнинг №01-04-28/63 сонли Факсограммасига асосан

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
9.	Маматдиева Нигоракхон	Алоқа замонёр	Андижон МЭТ филиали	93-445-20-93	<i>[Signature]</i>
10.	Аскарлов Шотбек	муҳандис	Андижон МЭТ филиали	99-085-22-02	<i>[Signature]</i>
11.	Солиев Оқмурод	Алоқа замонери	Андижон МЭТ филиали	91-610-22-25	<i>[Signature]</i>
12.	Туйчибеков Раҳматгулло	И/С бошбур-220 кВ бошлиғи	Андижон МЭТ филиали	99-439-40-70	<i>[Signature]</i>
13.	Матқосинов Муҳаммадхोшим	И/С Фозиломон-220 кВ бошлиғи	Андижон МЭТ филиали	99-607-20-38	<i>[Signature]</i>
14.	Ализолов Бахтиёржон	И/С Қисын-220 кВ бошлиғи	Андижон МЭТ филиали	99-010-01-97	<i>[Signature]</i>
15.	Хамдамов Латибжон	Муҳандис	Андижон МЭТ филиали	99-580-19-78	<i>[Signature]</i>

КУК расми: *[Signature]* Д.Хайитова





Сана: 2021 йил 7 апрел
Худуд: Бухоро МЭТ филиали
Лойиха номи: «Электр тармоқини узатириш ва барқарор узатиш (ESTAT)»

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Мирзоев Саид Саидович	бош муҳандис	Бухоро МЭТ филиали	93-459-80-98	<i>[Signature]</i>
2.	Алқамов Эрвон Абдулқалимов	Бош муҳандис уришбосари	Бухоро МЭТ филиали	91-485-57-43	<i>[Signature]</i>
3.	Жураев Тобит Тошмуҳаммадович	Капитал қурилиш бўлими бошлиғи	Бухоро МЭТ филиали	97-384-19-00	<i>[Signature]</i>
4.	Султонбеков Давлат Худайбердиевич	Ваш кассови	Бухоро МЭТ филиали	93-967-55-00	<i>[Signature]</i>
5.	Рузиқова Гулнам Тўлқунбекович	Ходимлар бўлими муҳандиси	Бухоро МЭТ филиали	91-402-58-09	<i>[Signature]</i>
6.	Жоёева Ўнсима Илхамович	Ресурслар бўлими	Бухоро МЭТ филиали	91-445-76-92	<i>[Signature]</i>
7.	Ибрагимов Забиржон	Каттагина қурилиш бўлими	Бухоро МЭТ филиали	91-449-42-32	<i>[Signature]</i>







Сана: 2021 йил 7 апрел
Худуд: Бухоро МЭТ филиали
Лойиха номи: «Электр тармоқини узатириш ва барқарор узатиш (ESTAT)»


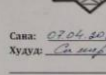

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
8.	Ражабов Бекмурат Аминович	Этапини муҳандиси	Бухоро МЭТ филиали	93-626-07-48	<i>[Signature]</i>
9.	Хожиева Ирода Ориповна	Капитал қурилиш бўлими	Бухоро МЭТ филиали	91-447-80-57	<i>[Signature]</i>
10.	Муминова Гул Шамсидиновна	Хайитовнинг ва нақсунчи бўлими муҳандиси	Бухоро МЭТ филиали	90-718-67-56	<i>[Signature]</i>
11.	Хайдаров Жамол Раҳимович	Релиз хизмати ва Электросинов хизмати	Бухоро МЭТ филиали	97-301-27-00	<i>[Signature]</i>
12.	Файзуллоев Нодиржон Собир угли	Ишлаб чиқариш техника гуруҳи	Бухоро МЭТ филиали	91-407-00-43	<i>[Signature]</i>
13.	Рузиев Шарифжон Исмоилович	Моддий техника таъминоти гуруҳи	Бухоро МЭТ филиали	93-479-39-07	<i>[Signature]</i>
14.	Аскарлов Сардор Жўрамухамедович	Моддий техника таъминоти гуруҳи	Бухоро МЭТ филиали	93-452-27-26	<i>[Signature]</i>

Директор филиали Бух МЭТ: *[Signature]* С.С. Арсланов




Сана: 07.04.2021
Худуд: "Ўзбекистон МЭТ" АЖ Андижон МЭТ филиали
Лойиха номи: "Ўзбекистон МЭТ" АЖнинг №01-04-28/63 сонли Факсограммасига асосан

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Қасабов Б.Н	директор	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
2.	Қасабов А.С	бош инженер	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
3.	Қасабов Шайхон	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
4.	Қасабов Зафарбек	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
5.	Қасабов Нарин	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
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3.	Қасабов Шайхон	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
4.	Қасабов Зафарбек	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
5.	Қасабов Нарин	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
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Худуд: "Ўзбекистон МЭТ" АЖ Андижон МЭТ филиали
Лойиха номи: "Ўзбекистон МЭТ" АЖнинг №01-04-28/63 сонли Факсограммасига асосан

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2.	Қасабов А.С	бош инженер	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
3.	Қасабов Шайхон	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
4.	Қасабов Зафарбек	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
5.	Қасабов Нарин	Бухоро МЭТ филиали	Андижон МЭТ	91-445-21-11	<i>[Signature]</i>
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Сана: 07.04.2021 йил
Худуд: Хоразм вилояти

Лойiha номи: «Магистрал тармоқлари подстанцияларини модернизация ва реконструкция қилиш» (II фаза) «Хазрат» ПС

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Писарович Валентин	Бун муҳт.ассосан	Қўқон қўшун Қўшма	55-208-08-07	
2.	Челмаев Чингиз	ВЭД м.и	Бун муҳт.ассосан	99-281-36-08	
3.	Алиев Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
4.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
5.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
6.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
7.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
8.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
9.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
10.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	

Сана: 07.04.2021 йил
Худуд: Хоразм вилояти

Лойiha номи: «Магистрал тармоқлари подстанцияларини модернизация ва реконструкция қилиш» (II фаза) «Хазрат» ПС

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
11.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
12.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
13.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
14.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
15.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
16.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
17.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
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Сана: 07.04.2021 йил
Худуд: Хоразм вилояти

Лойiha номи: «Магистрал тармоқлари подстанцияларини модернизация ва реконструкция қилиш» (II фаза) «Хазрат» ПС

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
2.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
3.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
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7.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
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10.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	
11.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	

Сана: 7.04.2021 йил
Худуд: Тошкент шаҳар Магистрал Электр Тармоқлари филиали

Лойiha номи: «Магистрал электр тармоқларини модернизация ва реконструкция қилиш» (II фаза) ПС Тракторсоз»

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
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Сана: 7.04.2021 йил
Худуд: Тошкент шаҳар Магистрал Электр Тармоқлари филиали

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Сана: 7.04.2021 йил
Худуд: Тошкент шаҳар Магистрал Электр Тармоқлари филиали

Лойiha номи: «Магистрал электр тармоқларини модернизация ва реконструкция қилиш» (II фаза) ПС Тракторсоз»

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11.	Рахмонов Рашид	ВЭД м.и	Бун муҳт.ассосан	99-238-57-53	

List of women-participants of public consultation

Сана: 07.04.2021 йил
Худуд: Тошкент шаҳар Магистрал Электр Тармоқлари филиали

Лойiha номи: «Узбекистон МЭТ» АЖ Андижон МЭТ филиали

Лойiha номи: «Узбекистон МЭТ» АЖнинг №01-04-28/63 сонли Факсграммасига асосан

Жаҳон банки иштирокида «Магистрал электр тармоқлари подстанцияларини замонавийлаштириш ва реконструкция қилиш» инвестиция лойиhasини амалга ошириш чора тадбирлари тўғрисидаги қарорига асосан видео конференциясида қатнашувчилар рўйхати

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Хайтова Дилфуза	ПСХ муhandиси	Андижон МЭТ филиали	99-087-55-51	
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3.	Юсупова Шахноза	Ихтисодчи	Андижон МЭТ филиали	99-086-20-33	
4.	Мухтарова Наргиза	ХБ муhandиси	Андижон МЭТ филиали	98-780-05-23	
5.	Маматдинова Нигорахон	Алоқа элмонтиёр	Андижон МЭТ филиали	93-445-20-93	

КУК раиси: Д.Хайтова

Сана: 28.21 йил 7 апрел
Худуд: Бухоро МЭТ филиали

Лойiha номи: Электр тармоғини узатгириш ва барқарор узатиш (ESTART)

№	ФИО	Лавазими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Руфина Гулбойи	Ходимлар бўлими	Бухоро МЭТ филиали	91-402-58-09	
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	Шамидиновна	Электросинов хизмати	Бухоро МЭТ филиали		

Директор филиали Бух МЭС: С.С.Арсланов



Сана: 07.04.2021
 Худуд: "Ўзбекистон Илмий Электр Тармақлари" АЖ Янгиёв Наманган
 электр тармақлари филиали Янгиёв ёкиёт Қозилана қишлоғи
 Лойиҳа номи: «Тендер тегиши янгиёвси бўлина оёвлар ширкатлари»

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Алимова Ашшога	Борниқор бўлини муди	Янгиёв АЖ	91-340-14-30	[Имзо]
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Сана: 07.04.2021
 Худуд: "Тошкент" М. Чирчиқ - Сто. 220 кВ
 Лойиҳа номи: «Электр тармақлари ширкатлари Ва Борбор қўшма ширкати (ESTART)»

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Турсунбеков З	Шошиёв тўлиқ вақт ишловчи	Тошкент ширкати		[Имзо]
2.	Алимова З	Шошиёв тўлиқ вақт ишловчи	Тошкент ширкати		[Имзо]
3.	Алимова З	Шошиёв тўлиқ вақт ишловчи	Тошкент ширкати		[Имзо]
4.	Алимова З	Шошиёв тўлиқ вақт ишловчи	Тошкент ширкати		[Имзо]
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Сана: 07.04.2021
 Худуд: "Ўзбекистон Электр Тармақлари" филиали, Самарқанд вилояти
 Лойиҳа номи: «Самарқанд вилояти электр тармақлари ширкати ва ширкати»

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Зайнова Н. К.	Менеджер	Самарқанд вилояти электр тармақлари ширкати	99-367-27-10	[Имзо]
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3.	Зайнова С.	Менеджер	Самарқанд вилояти электр тармақлари ширкати	99-367-27-10	[Имзо]
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Сана: 07.04.2021
 Худуд: "Ўзбекистон Электр Тармақлари" филиали, Самарқанд вилояти
 Лойиҳа номи: «Самарқанд вилояти электр тармақлари ширкати ва ширкати»

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
1.	Халилова Д.	М. Б. Б. Б.	Самарқанд вилояти электр тармақлари ширкати		[Имзо]
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3.	Халилова Д.	М. Б. Б. Б.	Самарқанд вилояти электр тармақлари ширкати		[Имзо]
4.	Халилова Д.	М. Б. Б. Б.	Самарқанд вилояти электр тармақлари ширкати		[Имзо]
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Самарқанд вилояти электр тармақлари ширкати

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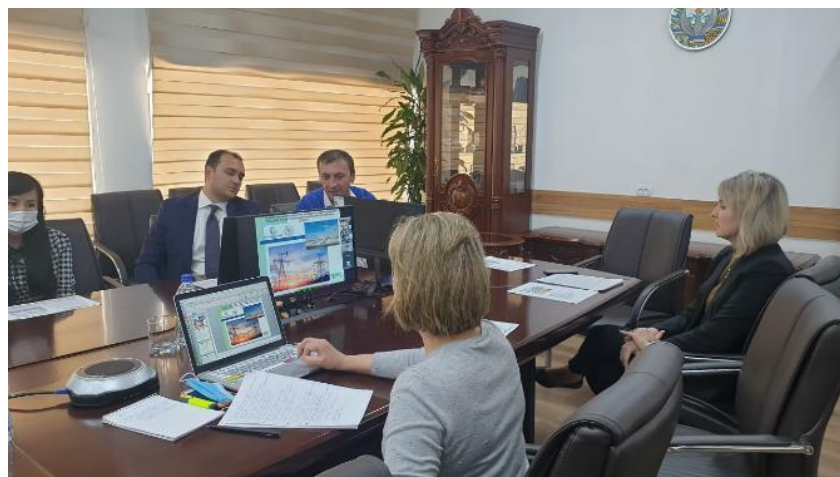
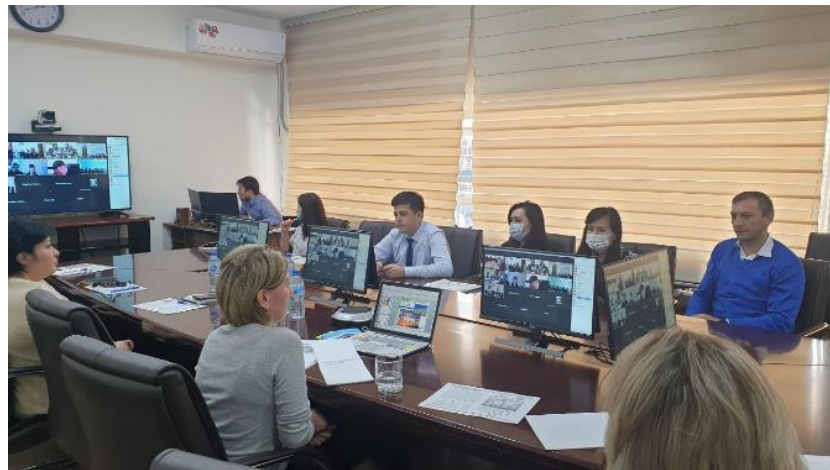
Сана: 07.04.2021 йил
 Худуд: Хоразм вилояти

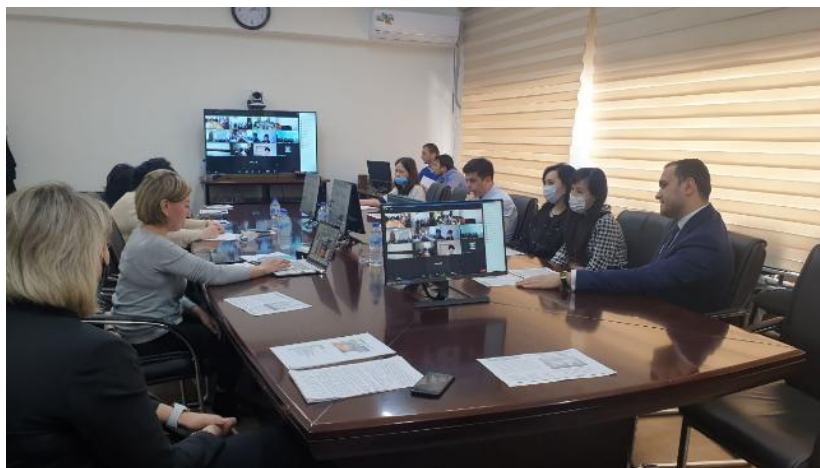
Лойиҳа номи: **«Магистрал тармоқларидаги подстанцияларни модернизация ва реконструкция қилиш» (фаза II), «Хазорист» ПС**

№	ФИО	Лавозими	Ташкилот номи	Контакт маълумотлари (e-mail)	Имзо
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2.	Валиева Марья	смағли инженири	Хоразм ИЭС	91-426-94-03	<i>[Signature]</i>
3.	Валиев Райис	техник	Хоразм ИЭС	91-426-95-93	<i>[Signature]</i>
4.	Валиева Шухаббат	бухгалтер	Хоразм ИЭС	97-363-00-23	<i>[Signature]</i>
5.	Валиева Регуза	HRB шукариси	Хоразм ИЭС	90-648-09-96	<i>[Signature]</i>
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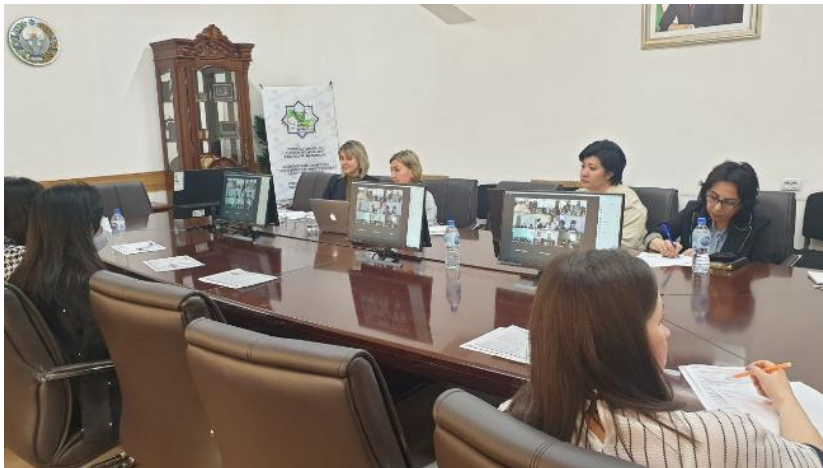
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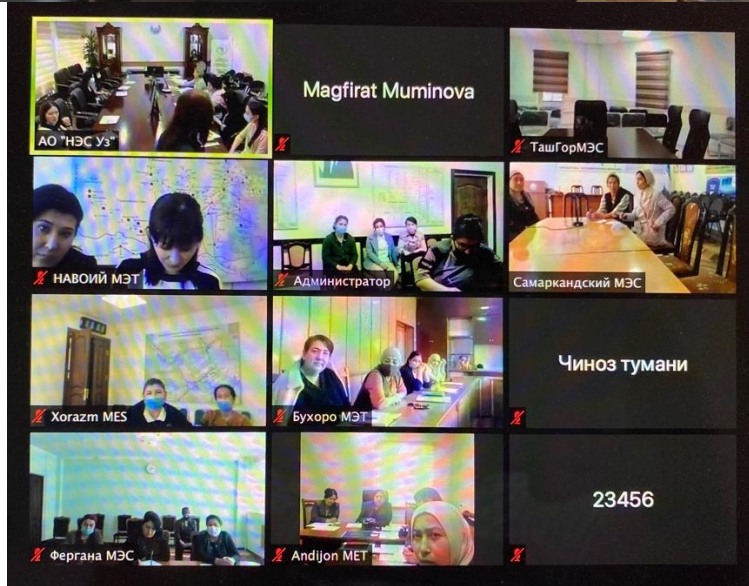
Photos of public consultation





Women public consultation





ANNEX 2. Proposed forms for monitoring implementation

Environmental Monitoring

№ Contract	Water		Noise		Air		Soil	Garbage
	Drinking	Waste	Nearest populated area	Active work area	Nearest populated area	Active work area	Active work area	Active work area
1								
12	PC	C	N					
12A								



C - Conforms



PC - Partly conforms



N – Not conform

Status of implementation of environmental measures

№ Contract	Noise control plan	Work sites	Camp	Waste Disposal Plan	Health and Safety Management Department	Road Traffic Management Plan	Dust Control Plan	Accidental Spill Plan
1	PC	C	C	N				
12								
12A								



C - Conforms



PC - Partly conforms



N – Not conform

Annex 3. Asbestos Containing Material Management Plan (Example) Applicability

The Asbestos Containing Material Management Plan (ACMMP) applies to all project construction or reconstruction sites and any related areas. Contractors employed by Project are legally responsible for their construction sites and related areas and must follow the provisions of the Project ACMMP within those locations. Specifically, this procedure must be used to ensure the safe handling, removal and disposal of any and all Asbestos Containing Materials (ACM) from those areas.

Immediate Action

On discovering ACM on a Project site, the contractor must:

- a) Stop all work within a 5 m radius of the ACM and evacuate all personnel from this area;
- b) Delimit the 5 m radius with secure fencing posts, warning tape and easily visible signs warning of the presence of asbestos;
- c) If the site is in an inhabited area, place a security guard at the edge of the site with instructions to keep the general public away;
- d) Notify the Safeguard Specialist and arrange an immediate site inspection.

Equipment

To remove asbestos from a construction site, contractors must provide the following equipment:

- a) Warning tape, sturdy fence posts and warning notices;
- b) Shovels;
- c) Water supply and hose, fitted with a garden-type spray attachment;
- d) Bucket of water and rags;
- e) Sacks of clear, strong polythene that can be tied to close;
- f) Asbestos waste containers (empty, clean, sealable metal drums, clearly labelled as containing asbestos).

Personal Protective Equipment (PPE)

- a) All personnel involved in handling ACM must wear the following equipment, provided by the contractor:
- b) Disposable overalls fitted with a hood;
- c) Boots without laces;
- d) New, strong rubber gloves;
- e) A respirator is not normally required if there are only a few pieces of ACM in a small area, and if the ACM is damp;
- f) There must be no smoking, eating or drinking on a site containing ACM.

Decontamination Procedure 1: Removing small pieces of ACM

- a) Identify the location of all visible ACM and spray each lightly but thoroughly with water;

- b) Once the ACM is damp, pick up all visible ACM with shovels and place in a clear plastic bag;
- c) If ACM debris is partially buried in soil, remove it from the soil using a shovel and place it in the plastic bag;
- d) Insert a large label inside each plastic bag stating clearly that the contents contain asbestos and are dangerous to human health and must not be handled;
- e) Tie the plastic bags securely and place them into labelled asbestos waste containers (clean metal drums) and seal each drum;
- f) Soil that contained ACM debris must not be used for backfill and must instead be shovelled by hand into asbestos waste containers;
- g) At the end of the operation, clean all shovels and any other equipment with wet rags and place the rags into plastic disposal bags inside asbestos waste containers.

Decontamination Procedure 2: Removing ACM-contaminated backfill

- a) a) If soil containing ACM debris has inadvertently been used for backfill this must be sprayed lightly with water and to be removed manually with a shovel as much as possible and placed directly into asbestos waste containers (i.e. not stored temporarily beside the trench);
- b) Any ACM during the taking out by shovel must be placed in a clear plastic bag;
- c) After the trench has been re-excavated to 300 mm, if no visible ACM remains, the trench can be refilled with imported clean topsoil using an excavator.

Disposal

ACM should be disposed of safely at a local hazardous-waste disposal site if available, or at the city municipal dumpsite after making prior arrangement for safe storage with the site operator.

- The Contractor must arrange for the disposal site operator to collect the sealed asbestos waste containers as soon as possible and store them undisturbed at the disposal site.
- At the end of construction Contractors must arrange for the disposal site operator to bury all ACM containers in a separate, suitably-sized pit, covered with a layer of clay that is at least 250 mm deep.

a) Personal Decontamination

At the end of each day, all personnel involved in handling ACM must comply with the following decontamination procedure:

- At the end of the decontamination operation, clean the boots thoroughly with damp rags;
- Peel off the disposable overalls and plastic gloves so that they are inside-out and place them in a plastic sack with the rags used to clean the boots;
- If a disposable respirator has been used, place that in the plastic sack, seal the sack and place it in an asbestos waste container;
- All personnel should wash thoroughly before leaving the site, and the washing area must be cleaned with damp rags afterwards, which are placed in plastic sacks as above.

b) Clearance and Checking-Off

- The decontamination exercise must be supervised by site supervisors (engineering or environmental).
- After successful completion of the decontamination and disposal, the Contractor should visually inspect the area and sign-off the operation if the site has been cleaned satisfactorily.
- The contractor should send a copy of the completion notice to the PIU, with photographs of the operation in progress and the site on completion.

TRAINING

RPIU's Environmental Specialist may hire the specialized companies to conduct training on ACCMP implementation for Contractors staff and RPCU and PIU. The training will include a session focusing on ACM, which covered:

- a. Risks of contact with ACM;
- b. Responsibilities for dealing with ACM on project's construction sites;
- c. The Project's ACMMP and the Protocol for site clean-up;
- d. Awareness-raising for the contractors' workforce.

COST ESTIMATE

Costs incurred by contractors in implementing the ACMMP are included in their budget in ESMP budget.